

# KINGS OF THEIR OWN OCEAN

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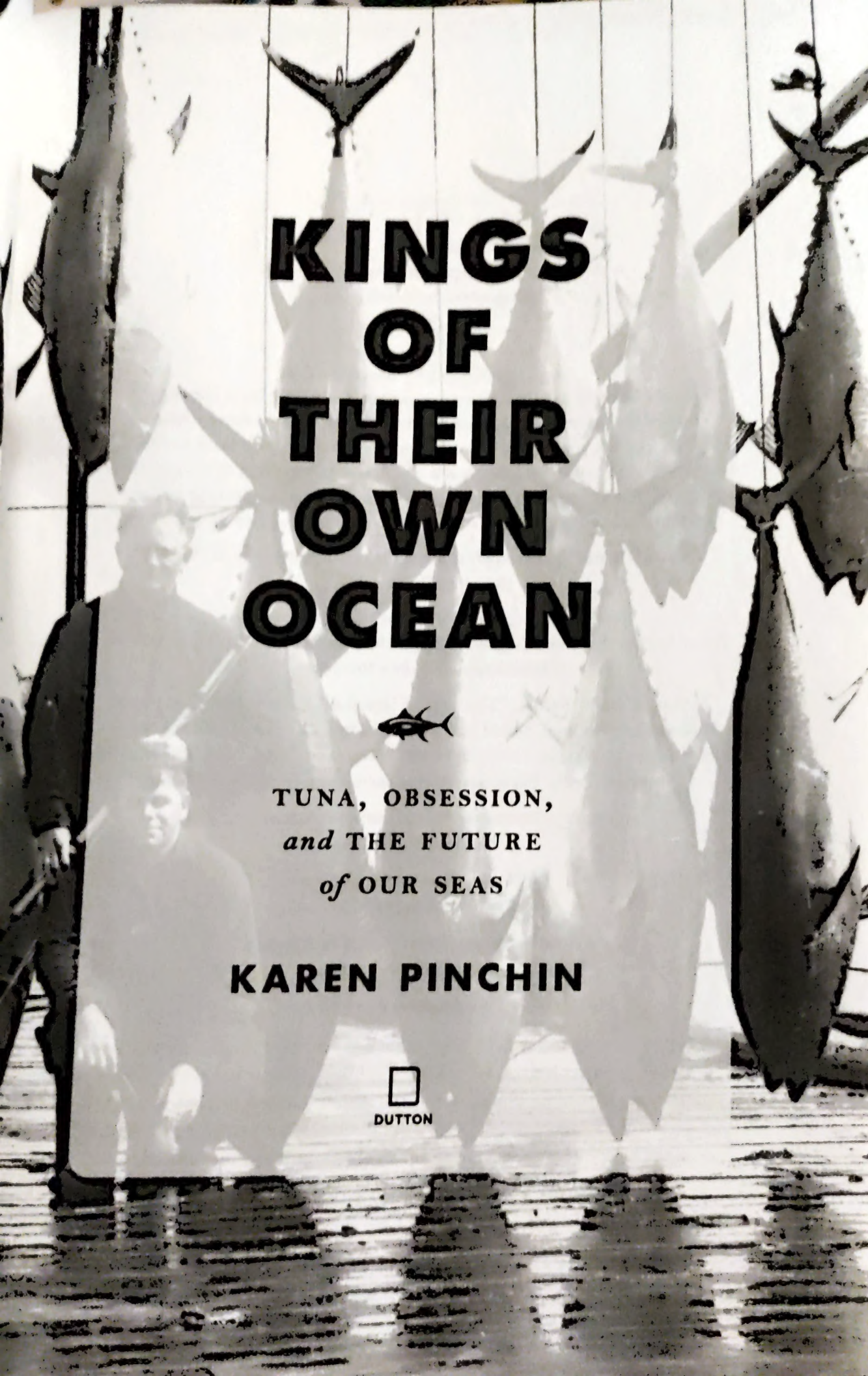
TUNA, OBSESSION, AND  
THE FUTURE OF OUR SEAS

KAREN PINCHIN

**KINGS  
OF  
THEIR  
OWN  
OCEAN**







# **KINGS OF THEIR OWN OCEAN**



**TUNA, OBSESSION,  
*and* THE FUTURE  
of OUR SEAS**

**KAREN PINCHIN**



**DUTTON**

*For my father, Don Pinchin,*

a

star

on

the

sea





Dead  
in front of me,  
catafalqued king  
of my own ocean;

.....

a well-oiled ship of the wind,  
the only  
true  
machine  
of the sea: unflawed,  
undefiled,  
navigating now  
the waters of death.

—PABLO NERUDA, "ODE TO A LARGE TUNA  
IN THE MARKET"



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## AUTHOR'S NOTE


*In this book I use the terms "fisherman" and "fishermen" to refer to both men and women engaged in the act of catching fish, despite the fact that those labels largely obscure the latter's massive importance within global fisheries. (Women compose half the world's total working population in the seafood industry.) Throughout my reporting, many women I interviewed expressed preference for the moniker; I have also used the gender-neutral "angler" when appropriate.*

*For clarity, I've used imperial pounds for fish prices and weights, reflecting current industry practice in many parts of the world. Otherwise I've used metric units—tonnes, for instance—throughout.*



## PROLOGUE

## AN ENDING



**I**n the middle of the Atlantic Ocean, between swells of blue-gray water, the sky is a dome over a dinner plate, vast and variable. The horizon's flatness cleaves a line through the elements, a trick of perspective obscuring the earth's true curvature. On an unpredictable sea, the permanence of that line, its physical declaration of up and down, anchors a reality a seafarer can cling to, a reality without which she—or you, or I—could lose herself.

At exactly 45° west latitude, between the coasts of North America and Europe and hundreds of kilometers from the nearest land, there's another line. This one cuts the ocean perpendicular to the horizon and runs vertically from surface to seafloor. Plummeting downward along this vertical cross section, dropping through watery layers, white sprays are tossed from wave tops; clouds of plankton and krill drift languidly; the sunlight fades and eventually disappears. Spidery starfish creep along the sandy seafloor past lurking wolffish. From spitting surface to deepest undersea

canyon, these strata take shape in my imagination like a painting in one of my son's picture books.

Ever since this line at the 45° west meridian was invented by humans, it has dictated the fortunes and fate of Atlantic bluefin tuna, one of our planet's most spectacular and vital apex predators. The line is also entirely theoretical, except to the extent that it controls a billion-dollar industry and has allowed humans to run roughshod over one of the world's most contested species for decades.

Atlantic bluefin tuna, *Thunnus thynnus*, have lived for millions of years in our physical world and captured human imaginations long before the written word. Ancient peoples trapped bluefin in shallows and killed them with rocks and sticks; Greeks and Phoenicians immortalized the economically important fish in art and theater, and even stamped its image on early currency. Bluefin are "charismatic megafauna"—a category of large, big-eyed beasts including elephants, lions, and whales that serve as placeholders in the public imagination—and have come to represent the health of our oceans and the overfishing that besieges them.

Compared with floppy, schooling fish, giant bluefin are more machine than fuel, more predator than prey. I was in my mid-20s when I first saw one in person, and it fit my idea of "fish" as much as a dinosaur resembles a chickadee; there was, from that initial impression, a problem of scale. The largest tuna ever caught weighed 1,496 pounds, if you can imagine a grand piano shaped like a nuclear weapon. To stand beside a just-landed giant bluefin, still slick from salt water, feels akin to standing beside a natural marvel like Niagara Falls or an erupting volcano. There's beauty, but also danger.



Every late summer and early fall, schools of gorgeous, massive bluefin rocket along North America's Atlantic coast. They are an advanced rod-and-reel sport fisherman's fish: catching one requires time and a full set of pricey and intensely specific gear, including a volleyball-sized brass reel built to handle a tuna's heft. Some fishermen call bluefin "marauders"; others, "racers." The genus name *Thunnus*, after all, comes from the ancient Greek word θύνω, or *thuno*: rush.

Throughout the mid and late 1970s, the world's three bluefin tuna populations—Atlantic, Pacific, and Southern—plunged globally because of rampant overfishing, largely due to demand for the sushi-grade fish in Japan. In 1981, two dozen tuna-fishing countries made their first move to restrict the trade, drawing a line down the middle of the Atlantic Ocean during a meeting hosted by the Spanish government in Madrid. That line ran from the southernmost tip of Greenland, zigzagged around Brazil's rocky bulge, then progressed south off the map toward Antarctica. Starting the following year, all bluefin tuna caught to the right of the line toward Europe and North Africa would be considered "eastern" fish, while all to the left would be "western." At the time, prevailing scientific thought held that the powerful, warm-blooded fish largely gravitated back to the coastlines where they were born, with eastern fish spawning in the balmy Mediterranean and their western counterparts in the Gulf of Mexico.

Overnight, this conceptual line transformed the fisheries for Atlantic bluefin tuna. Toward the European side of the Atlantic Ocean, harvests remained a free-for-all with no quotas on how many fish could be caught and killed for the countries that had historically fished those waters. Toward North America, for

countries including the United States and Canada—and for historical reasons, Japan—not a single fish, other than those purportedly caught for “scientific purposes,” could be legally caught. Called the two-stock theory, this understanding of how tuna breed and migrate, as two almost entirely separate populations, set the stage for how Atlantic bluefin have been protected and managed for the entirety of my lifetime.

Growing up in a leafy suburb abutting Lake Ontario, I learned how to catch and gut a fish before I knew how to blow-dry my hair or paint my nails. My father, Don, a successful businessman and scientist, had spent his own childhood angling on rural rivers and lakes with his farmer parents and wanted to pass along his love of fishing to me and my two younger siblings. We spent summers jamming oozing worms onto hooks, threading bobbers, and paddling to find the best fishing holes. Fishing, he lectured, was a controllable craft and act of human will, hypothesis testing, and logic—with results you could eat for supper. In this and other ways, raising us alongside my chemist mother, he tried to teach us about the immutable final authority of science. In contrast, I wanted to write poetry or maybe books, captivated by our world's living systems and its nuanced, pulsing rhythms. My parents rolled their eyes at my earnestness.

Still, I refused to give up my dream of being a writer. Curious about food, I enrolled in culinary school and used that training to write about chefs and restaurants while earning extra money cooking and catering. Once, a fisherman supplied a three-foot-long bluefin tuna to a restaurant where I worked, forcing me to



## An Ending

search online for an instructional video on how to butcher the pricey fish. Before inserting my razor-sharp knife along its backbone, I stroked its metallic, glossy sides, marveling at its heft and beauty. With its dense, red flesh, it was nothing like the flimsy perch and bass I had grown up catching. Once I had cut and vacuum-sealed the bluefin's slabbed steaks, they all sold out within hours. I scraped the extra flesh from the carcass with a spoon and used it to make a marinated Hawaiian poke. I heaped the unctuous result onto tortilla chips, the richness of its flavor mingling with salty soy sauce and fiery chilies. I felt thankful, and lucky.

In my early 30s, in the months before I gave birth to my son, my father was diagnosed with pancreatic cancer. I found out he was dying on an unexpected video call from my family, who had gathered to break the news. It sucked me under, swamping me with the cosmic unfairness of receiving new life just as the universe demanded one in return. Cancer doesn't run in our family; my father didn't smoke or drink heavily. There seemed to be no logic to it, no equations or science that could explain the loss we faced, even as a new child grew inside me.

Throughout his career, my father had worked to prove himself to the world, to his own small-town farmer parents, to himself, to us. He recited ancient poetry from dining room chairs—his specialty was Lord Byron's "The Destruction of Sennacherib"—collected antique maps and clocks, tore branches loaded with cherries from abandoned orchards and passed them around our car as he drove. He was always blunt and sometimes cruel. He could be a hard person to love.

Pancreatic cancer left my formerly vigorous father jaundiced

and irritable, but it was an aggressive glioblastoma brain tumor that eventually hollowed him out. The last time I saw my father was on a sweltering summer day in the city of my birth, my newborn son in my arms. My father died before I had the chance to understand him, the loads he carried, or the invisible energies that spurred him forward. His absence left me unmoored, setting my sense of home and belonging adrift.

Two years after that hot, sad summer, I started a master's program studying science journalism in New York City. My husband, son, and I moved to the Upper West Side on an August day laced with the smell of linden blossoms and melting pavement. Within academia I wrote about the ocean and climate change, about the death and survival of salt-inundated coastal trees, about scientists who studied the North Sea's smallest currents. Recollections of my parents' professional lives that I had walled off from my writing life up to that point came flooding into my journalism: playing with windup toys on the floor of my father's office while he worked on a Saturday; my mother performing experiments and floating in zero gravity on flights at the Johnson Space Center.

My parents allowed their careers to seep into our lives in small ways, like my mother's uncanny skill at tempering chocolate and my father's ability to toss a fishing line into a riverside pool in the exact spot where he knew bass would be resting. He skillfully steered our canoe, holding monofilament line between his lips, waiting for a telltale tug of a biting fish. He thought nothing of pushing a barbed hook through the lips of leopard frogs he'd catch with cupped hands on the shoreline. He kept those frogs alive on the end of his hook so their kicking legs attracted the



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biggest muskellunges and pikes. We ate those fish for supper after he gutted them on the dock. We poked through their slimy stomach contents to make sure we were using the right bait for the season.



**ONE SUNDAY AFTERNOON** while walking in Manhattan with my husband and toddler, my cell phone rang with an out-of-the-blue call from a marine scientist named Molly Lutcavage. I had emailed her the week before, curious about her work tagging bluefin tuna off the northeastern coast of the United States near the historic port of Gloucester, Massachusetts. We had never talked before, but she jumped into the call as if we were longtime collaborators. She talked quickly; she told me a story about a bluefin tuna, a scientific tag, and an astonishing discovery. Half an hour later, as my husband fed my son pizza inside a streetside café, I was sitting there on the sidewalk, my back leaning against the café's cold stone outer wall. With my head crooked to the side, I pressed my slippery phone to my ear above an aching shoulder as I scribbled into a notebook.

Eleven years prior, Lutcavage had been conducting research off the coast of Cape Cod aboard a chartered tuna fishing boat when her team caught an approximately five-year-old Atlantic bluefin tuna. The female fish's iridescent gray-blue skin gleamed and refracted the light like a scarab. She fought the air, kicking the small, powerful muscles of her tail in bursts as Lutcavage's team scrambled to keep her still and unharmed. As Lutcavage's boat

bobbed on the waves, the scientist realized they had captured an incredible needle in a haystack: a large tuna that had already been tagged once before. In her back nestled a yellow spaghetti tag, a fish-tracking apparatus named for its long, cylindrical shape. Embedded near her dorsal fin, the palm's-length tag bore a string of tiny identifying numbers. For Lutcavage, finding the tag felt "like Christmas," for reasons that wouldn't become obvious to me for months.

From the moment she saw the tag, Lutcavage harbored suspicions about who had inserted it. Back on land, she confirmed those suspicions, even going so far as to personally call the fisherman responsible for tagging the fish three years prior: Al Anderson. His was a name she knew well. Anderson was an industry-famous skipper from Narragansett, Rhode Island, whose main business involved taking charter clients out on his boat, the *Prowler*, and catching lots of fish. Unlike on most charters, though, Anderson's clients didn't keep most of the fish they caught. Instead, they helped Anderson tag them and set them free, pitching them head-first back into the open ocean. The other fishermen in his harbor thought it was a bizarre business model, but over the decades Anderson had built a reputation doing it. He had even won international awards for tagging more bluefin tuna than any individual fisherman in the world ever had—or would again.

It had been more than a decade since Molly Lutcavage slipped that recaptured tuna back into the ocean off the coast of Massachusetts. And she called me that day in 2018 in response to my casual email, bearing news of her most recent scientific success—that the same tuna had, only a month before, been captured a third and final time in the south of Portugal. That meant Anderson and Lutcavage's fish had traversed the entire Atlantic, defying con-



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ventional wisdom and entering the growing ranks of bluefin messing up that orderly, imaginary 1981 line bisecting the ocean into eastern and western zones. She may even have crossed the Atlantic more than once. Lutcavage eventually gave the fish a name: Amelia, for Amelia Earhart, an iconic woman who had crossed the same ocean on currents of a different kind.

From that day, Amelia's crossing, its implications, and Al Anderson himself consumed my spare time. The gossamer threads linking him, a fisherman obsessed with fish tagging, to a huge dead fish in Europe gradually entrapped my imagination. I traveled to Fords, New Jersey, Al's birthplace. I spent hours in the Rhode Island basement where he kept his records and spooled his own fishing line. I listened to stories about Al—of the demons that chased him, of the regrets he carried and weaponized in the service of his own success—and was reminded of my father's rare but stormy outbursts. I crossed the Atlantic Ocean, hunting for the exact patch of sea where Amelia had been killed, following her path toward the world's second-largest fish market in Madrid, as well as to Tokyo, where many thousands more of her fellow bluefin end up on the chopping block every year. This story drew me in, spun me around, and spat me out, encapsulating the incomprehensible scale and small cruelties of our modern existence on this planet.



**SINCE THE 1970S**, global bluefin tuna populations have surfed the curling edge of collapse. Bluefin tuna flesh is tasty and nutritious,

qualities that helped fuel the rise of the Phoenician and Roman empires. Despite making up only 1 percent of the world's tuna catch—other species include albacore, yellowfin, and bigeye—bluefin tuna makes up nearly two-thirds of its value. Since Mediterranean fishermen employed huge nets to catch bluefin en masse 3,000 years ago, demand for the fish has existed in uneasy balance with its natural ability to reproduce and thrive. And despite billions of dollars spent, decades of scientific research, and numerous campaigns to “Save the Bluefin,” that remains as true today as it was decades ago.

Amelia inspired my own journey into the purpose and meaning of science and its limitations, including an exploration of how far we've come—and how far we've yet to go. And as I lost myself in the ocean, traveling alongside Anderson and Lutcavage's fish, I passed signals and signs of greater upheavals: conflict over global fishing rights, bluefin poaching, and the future of our food supply in a changing climate. For years, Amelia crossed the Atlantic Ocean and evaded capture. She ate and spawned and grew. Humans caught her, and then caught her again. Finally they killed her.

Over those same decades, the people who touched her flanks experienced their own triumphs and tragedies, losses and redemptions. If everything my parents taught me about science is true—if facts are indeed the sun around which we all orbit—then those puny human emotions can't hold a candle to the ocean's scale and its untouchable power. Yet around every bend of this journey, I found both human and animal existences amplified: the exquisite ache of failure; the tightrope walk of existence; serene joy in our planet's offerings and deliverance; and ultimately how quickly it all can end. What started as a simple fish story showed



## An Ending


me a world where bold scientific, commercial, and personal endeavors can crystalize into a single burning vision. But occasionally those visions collide, sometimes leaving their bearers forlorn, other times carrying them to the greatest heights. And often science itself, the tool and technique through which we grasp for certainty in an uncertain world, has little to do with who, or what, wins or loses.

Diving into the history of bluefin and the human communities that have lived alongside the species for millennia, I glimpsed a vision of a reciprocal future, one in which human passions could dovetail with our long-term survival on this planet—a quest that must include the right of wildlife to thrive alongside us. I discovered we all need our own versions of that 45° line: a boundary to anchor us, others to hold us, or even a small sense that this all might mean something in the end.

But before reaching for dry land, we must first enter the sea.

## CHAPTER ONE

### HOOKED



#### **Al and Amelia, Their Early Years**

When you finally see what goes on underwater, you realize that you've been missing the whole point of the ocean.

—DAVE BARRY, "BLUB STORY"

**D**eep below the surface of Rhode Island Sound on September 27, 2004, a bristling school of Atlantic bluefin tuna sliced above an inky-blue landscape of sandy sea bottom and glacier-sheared boulders. Brothers swam beside sisters, alongside cousins and distant cousins. They were all only a year or two old, but in the depths off Block Island they were already feared. The warm-blooded species has a voracious appetite, and the juvenile fish ate nearly everything they came across—shrimp, deep-water squid, jellyfish—near constantly, and in constant motion, since bluefin must swim to breathe. Their eyes, the sharpest of all the bony fishes', perceived filtered light from the



surface as it dimmed and brightened around them, each night and day like those before.

Within the school, one half-meter-long female fish coasted, her pectoral fins splayed like airplane wings that helped her glide and tweak the power generated by her sickled tail. She had small, chartreuse-yellow triangular points running along the top and bottom of her back and belly in matching rows of dinosaur-like finlets. Her torpedo-shaped head was smooth, interrupted only by the downward-curved gash of her mouth and dark eyes. She was one of many, and during her lifetime she would be nicknamed Amelia by a scientist named Molly Lutcavage.

Many months earlier, back when she hatched and grew into a three-millimeter-long larval fish, Amelia's eyes first opened on the warm waters of the Mediterranean. Bluefin tuna spawn only when water reaches between 20 and 29 degrees Celsius. When they do, they breed in the dead of night, between 2 A.M. and 4 A.M., producing milky clouds of millions of eggs and sperm that drift five meters below the ocean's surface. Once fertilized, each egg measures about a millimeter across and will float on balmy currents for one to three days.

Amelia's first meal after hatching was an oil droplet contained in her yolk sac. Her tiny body quickly developed huge black eyes and a digestive system, including a disproportionately large, hinged jaw with a toothsome underbite. Over the next two weeks she grew needle-sharp teeth, a stomach, and gastric glands to eat and digest crustaceans, including the copepods and water fleas that made up her earliest diet. When she struggled to find food, she ate smaller bluefin larvae to survive. By 25 days old, she had developed a swim bladder and a notochord, or early backbone, and

started to swim with other centimeters-long bluefin her own size. They ate any fish smaller than themselves, evading predators and growing larger, eventually following their species' annual outward migration westward to the Atlantic's cold, nutrient-rich waters.

Sometime between her birth and 2004, Amelia accomplished her first feat of long-distance swimming, crossing the Atlantic Ocean's entire breadth before arriving off the coast of western Rhode Island. As she matured, she was on track to beat the odds, becoming one of only two of her fellow 30 million fertilized bluefin tuna eggs to make it to full-grown adulthood.

As Amelia cruised the waters off Rhode Island, it was a day like any other. But it was also a day for fishing.

A handful of kilometers away, on that same dark, predawn September 2004 morning, Al Anderson's hulking black truck sped along the paved road that dead-ended into Narragansett's Snug Harbor. Its headlights flickered between birch and alder, darkened homes and mailboxes, blurring them into stop-motion. Al already had waved goodbye to his wife, Daryl, who had flapped back from their porch with her dish towel, and he couldn't wait to get fishing. Driving down the steep pitch toward sea level, tall, anvil-headed Al, with a wiry mass of black hair and his trademark trimmed mustache, parked into a prime pull-through parking spot beside a drooping tree. He killed the gas and stepped down, eyes scanning the dock for competition, then walked toward his boat, casting lanky floodlight-lit shadows on the dock's gray, flaking planks. Dried-out iridescent scales glinted in the light under



his feet, mirroring the fading stars above. There, in prime position near the diesel pump, rocked the *Prowler*, the third of Al's boats to bear the name.

A 13-meter sportfishing craft, this *Prowler* was bone-white, her hull made by a North Carolina builder named Alex Willis. Back when Al had made the leap to fishing full-time, he had spent long days searching the Tar Heel State for the functional boat of his dreams—one he could afford, of course. North Carolina had long been renowned for its curled-lip ocean yachts, and Al knew the boat would likely be the biggest he'd ever own.

That morning in 2004, Al had been hired by charter clients to take them out fishing, which he did nearly every day between the spring and late fall when the weather cooperated. This day promised to be a beauty. Al's mate for the season, Bryan, already had arrived on the boat, and their clients were set to show up at any minute.

Those clients—32-year-old Jason Williams and his brother, David, and father, Richard—woke up on musty-smelling mattresses at a nearby motel. The place was “kind of a dump,” Williams told me, but it was close to the harbor. He had contacted Al by telephone a few weeks earlier after reading an article penned by the longtime charter captain about catching bluefin using a lightweight fly rod. Back then, Williams spent every spare waking moment either going on or planning fly fishing trips, and in the fall of 2004, huge numbers of bluefin had shown up just west of Block Island, powering within a strip of water known as the Race. So Williams took the bait, convincing his father to cover the \$400 deposit and pay Al's higher-than-average \$1,350 group fee.

As they got out of their car and headed to the marina in darkness, Williams walked toward the ocean. The wind barely whispered, blowing at less than five knots from the southwest. From the dock, Williams caught a glimpse of Al standing in the *Prowler's* wheelhouse. "Go ahead," Williams told his brother and father, who followed his instructions, striding down onto the pristine white of the *Prowler's* deck.

Descending from his perch, Al moved toward them, his arms spread wide. Williams immediately knew they weren't being welcomed. Instead, they were being *pushed off the boat*. "He hadn't invited us on yet. He just came walking at us and shoved us back off," said Williams. "It wasn't like, 'Good morning.' It was like, 'All right, you guys get off the boat and I'll tell you when to get on the boat.'" Walking backward, the shocked fly fisherman thought, "Holy shit. This is going to be a long day." The moment hung in the air, the three clients standing awkwardly on the planks. A beat passed. Then another beat, and as if nothing had happened, Al smiled and genially waved the group aboard.

By 6:30 A.M. the *Prowler* had powered out of the harbor. Over the roar of its dual motors, Al yelled for Jason, who carefully picked his way toward the helm. To his relief, Al only wanted to chat fishing. Previous trips that week had gone well, the old salt boasted with enthusiasm, and he had high hopes for their trip. At one point, Williams caught himself staring at Al's face, lit red by the dim glowing lights of the boat's crimson instrumentation and cockpit lights. It felt more cozy than spooky and was an effect in a fishing cabin he had never seen before. The barely visible lighting made perfect sense; red light doesn't kill your night vision, and the low lighting signaled to Williams that this was a boat



devoid, as he felt, of "bullshit." Obviously Al knew what he was doing, and had done it thousands of times before. And the *Prowler* was immaculate: there were no buckets lying around full of rusty fillet knives, no smears of desiccated fish blood left on the deck.

Less than an hour after leaving the harbor, they arrived at that day's fishing grounds, a popular spot called the Mud Hole. Al motored until he found a spot he liked, looking for fish on his sonar and carefully analyzing the currents that pushed around them. Once floating atop a patch he felt good about, Al killed the big engines, allowing the boat to drift as he and Bryan double-checked their rods and lines. That day, in addition to Williams fly fishing with his own gear, the group fished from standard rods and reels spooled with green monofilament, a single extruded nylon strand Al favored for its strength and near transparency underwater.

The lines' ends were tied with four-ounce diamond jigs, each with an elongated bullet shape and four light-catching sides with a hook on the end. "Diamonds" have been handcrafted by enterprising fishermen for more than a century; they are simply dropped into the water, where they fall vertically, flashing like a small fish when pulled behind a drifting boat or reeled in. They're often used to catch black sea bass and bluefish. Here he was, chuckled Williams to himself, trying to land a mighty marine predator with a rod a kid could lift and tackle he could buy at any basic tackle shop.

First, Al needed to let the tuna know where they were. To do that, he and Bryan chummed the water, dumping chunks of creamy-fleshed butterfish behind the boat. Within moments of their first line hitting the water, the Williams men started pulling at strikes

on their rods, hauling juvenile bluefin tuna into the boat by the dozens, feeling the adrenaline hit as they hauled on the reels over and over again. They couldn't believe their luck. The one- and two-year-old fish hanging from their hooks were nicknamed "footballs" for their prolate spheroid shape and size but were denser than they looked and fought hard. Williams savored every second of the action. He felt the tips of the rods jerk in his hands with every strike, bracing his feet and stomach, sensing tension on the line as he fought each fish. The reel spun every time it ran from the boat, its rod tip bending like a weighted willow branch toward the water.

During his first phone conversation with Williams, Al had made himself clear: unlike most charter clients, their group would keep only one fish. Even if they could legally keep more, if it were up to Al, they would catch as many as they could and then tag and release them all. To be sure, most clients returned with wet bagfuls of fish to feed families and friends, to brag about at backyard barbecues over beers. But what Al really wanted to do out on the water was to mark as many fish as possible with tiny bits of numbered plastic, set those fish free, and wait for the data to flow in. And that particular day was on track to be one of his greatest yet for tuna tagging.

Two years earlier, Al had re-caught a bluefin tuna he had previously tagged himself, an experience that fanned the flames of his obsession. Daryl recorded the moment in Al's tidy annual logbook, a lined dossier with a black-and-white mottled cover and pages that crackled with ink running from margin to margin. With every year he fished, those logbooks piled up, their spines and contents bulging with successes and failures. Since his first days of tagging fish, Al once wrote in an unpublished memoir, he



had long hoped to beat the extremely slim odds that he, a single fisherman, could catch the same fish twice.

"How naïve I was!" he wrote in 2018 of those early hopes, wryly noting that it "only" took 36 years of bluefin tagging for it to happen. On the occasion, officials at the National Marine Fisheries Service (NMFS) told him only a dedicated tagger could ever hope to recapture a bluefin they themselves had marked before. "The simple satisfaction of recycling this particular fish makes all the effort over the years worthwhile," he said. "You can't imagine how good that feels." Accomplishing a feat that few anglers could fulfill a primal need in Al; he wanted to feel remarkable, and to know that through hard work, preparation, and grit he could accomplish something extraordinary.

That September day with the Williams family was the type of fishing day Al dreamed of: calm and sunny atop a gently rolling ocean that hadn't yet lost all its summer heat, with a seemingly unceasing well of fish eager to take the bait. After the first few fish, Jason Williams couldn't believe how many they were catching. "I'm going to sound like an idiot," he said as he and I discussed his hazy memories of that day, "but you'd get bored before you'd get tired." More than once, he and his brother or father were fighting a fish simultaneously on different rods as their tips arced toward the ocean's surface and each hard-fighting baby bluefin below.

To start the tagging process, first Al would scoop each tuna out of the water using a net designed for striped bass. (The comically small net struck Williams as ingenious. Imagine a mighty bluefin tuna in that itty-bitty net!) Moving smoothly to hold the slapping

tuna steady, Al would use a swift strike from a tagging stick to insert a thin, round yellow spaghetti tag near the back of each fish's larger front dorsal fin.

After long moments spent gasping for air, each tagged fish needed to get back in the water as quickly as possible. With his strong right hand holding it firmly by the body, Al would drop it nose-first into the chilly water. Some fishermen simply tossed a fish back overboard, but if it lands tail-first it can fall into shock and die. Those dead fish drift down past their schoolmates, the wasted charnel of human recreation. Later, standing at the *Prowler's* console, Al would officially record the weight and length of all the fish he caught on tagging data cards, which he'd then mail back to the NMFS.

"Few in the New England charter fishing industry have ever understood the advantages (immediate and longer range) to assuming their logical roles as stewards of the resource(s) on which their very livelihood depends," Al wrote in his 2012 book, *Island Stripers*. Over the years fellow skippers ridiculed him for his fish tagging, even taunting him for passing on a lucrative local black-market trade in selling undersized tuna to hungry Rhode Islanders. "If that was their attitude—if, that is, they measure a day's fishing against its yield in dead meat (much of it destined for freezer burn and, ultimately, the landfill)—I wanted no part of it (or them)."



**NOT MANY PEOPLE** in Al's life ever knew, but his brash outward persona had been shaped by a deeply painful childhood and a



recurring fear of being abandoned. Memories from his early life haunted him and, according to those who knew him best, formed the foundation of his single-minded dedication to success that eventually sparked his fascination with fish tagging and bluefin tuna.

Al was born in 1938, sandwiched by the Great Depression and the Second World War, the only child of Arthur and Isabelle Anderson. Throughout Al's infancy and toddlerhood, his father couldn't find work and picked up work for cash. His mother was prone to long, awkward silences and outbursts, and she struggled to hold down a job; sometimes she spoke in tongues or went on meaningless rants. Many in their New Jersey neighborhood whispered behind her back.

The year Al finished third grade, his parents abruptly separated. His father insisted on keeping Al but couldn't stay in his mother-in-law's home, where the family had lived for all of Al's early life. Suddenly homeless, Arthur packed up his son and a few small bags and the pair started sleeping in the family car, which he parked on the periphery of public parks and alongside abandoned beaches. After some weeks, Al caught a terrible cold that forced the pair to move into a big, drafty house owned by Al's paternal grandfather, a home already occupied by one of Arthur's brothers and two of Al's cousins. Father and son bunked together in an attic bedroom on the third floor, which, in the frigid, Atlantic-blown winters, struggled to catch heat from the basement's coal-burning furnace. In lieu of rent, Arthur's father tasked him with keeping the boiler lit; nine-year-old Al cleared the ashes every morning.

During that winter's coldest moments, Al dreamed of spring

and adventures of warmer weather. By six years old he had already fallen in love with fishing. He adored the restful rhythm of sitting by a pond, of dropping his line into the water and pulling up a fish. On Al's favorite, most hopeful days, his mother would pick him up from school in an old inherited Plymouth and they'd drive to nearby Fords Park. There they'd sit, side by side, eating sandwiches as Al fished with a stick, string, and a small ball of bread skewered on a bent pin. He caught nearly every sunfish in that pond.

With access to both saltwater ocean and freshwater lakes and ponds, most midcentury New Jerseyans could try to catch a fish for dinner when the urge struck. It was a time without recreational or commercial fishing limits, so the only true cap on one's catch was time, patience, equipment, and how many fish could be carried home. Before the arrival of factory freezers and deep-sea sonar, the ocean off North America's Atlantic coast teemed with life. A hundred years after John Cabot arrived on Indigenous-inhabited Turtle Island—North America's original name—British fishermen reported schools of cod "so thick by the shore that we hardly have been able to row a boat through them." Just off the eastern seaboard, flocks of birds shadowed enormous runs of fish sprawling millions of cubic meters, chasing tiny, oily, ecosystem-sustaining fish like herring and mackerel as well as the giant tuna and sharks that pursued them.

In the years following the Second World War, steam- and diesel-powered ships swiftly replaced fishing under sail as the dominant technology, and shipbuilders equipped many of these new vessels with trawling and dragging nets that could catch thousands of fish at once. They scooped up fish from the water



column across huge distances or scraped seafloor-dwelling fish, like flounder, off the ocean bottom. With some scientists startled by the high rate of extraction, this era also birthed the science of fisheries management, which was, essentially, the mathematical modeling and prediction of the health of aquatic species in proximate environments and ecosystems. In 1931, America's federally funded Woods Hole Oceanographic Institution (WHOI) commissioned its first vessel specially built for marine scientific research, the 43.5-meter-long sailing ship *Atlantis*. It was later joined by *Asterias*, a hard-pine commercial-style boat, and the *Albatross III*, a former fishing trawler. While aboard, WHOI researchers studied populations of groundfish like haddock, hake, and fluke offshore to better understand the valuable and heavily fished species.

In 1952, scientists with the US Fish and Wildlife Service's technological laboratory in Boston used an experimental trawler named *Delaware* to invent a technology that could freeze fish at sea. The technique offered a "practical solution to the dream of deep-sea fishermen," declared American fisheries technologist Harris W. Magnusson at a 1953 conference in Stockholm, "to deliver a capacity load with . . . uniformly high quality and . . . the highest prices." This new invention relied on a rotating system of 11 round wire-mesh baskets, each 2 meters long and 0.6 meters in diameter, that rotated through an ice-cold tank of salted brine. Each basket held up to 500 pounds of freshly caught fish, and the system could freeze up to 770 pounds per fish solid every hour, which were then slid, via a chute, into the trawler's 100,000 liters of cold storage—about the same volume as 10 cement trucks. Once workers transferred the fish off the vessel into canvas baskets used at Boston's bustling fish pier, they were held in a ware-

house and eventually thawed in vats of fresh water. Filleted in factories, the previously frozen fish produced "uniform, high-quality, marketable, and delectable filet[s]," wrote Magnusson. Thanks to this new process, entrepreneurs could catch and store fish and ship them to towns and cities hours away. The change represented an upheaval for fishermen who, since Cabot's time, had been forced to rely on either selling fresh fish locally or preserving fish using time- and labor-intensive techniques like canning, smoking, salting, or drying.

As Al's family struggled to keep food on the table, the young angler quickly learned that he could help with dinner and earn praise on the side by catching fish. After more than a year spent living with his father in the drafty attic, 11-year-old Al moved back in with his mother, who had found secretarial work, and moved with her to nearby Metuchen. Every day that first summer, he hopped on his bike and pedaled 2.5 kilometers by himself to Roosevelt Park to fish in its lake. Going out in the morning, at noon, and even sometimes after dark, Al observed the rhythms of each species, the food they liked, the behaviors that drew them to his bait. He caught perch, the occasional largemouth bass, and at least a few weeks' worth of early-season stocked trout every spring. When he finished fishing for the day, he hid his crude, cheap tackle in the lakeside scrub and pedaled home, bearing the best, plumpest fish for his mother to cook for dinner.

In the 1950s, Fords, New Jersey, sat at the crux of two newly built superhighways—the New Jersey Turnpike and the Garden State Parkway—and had recently started to reap the rewards of



the accompanying boom. By the middle of the decade, Al's beloved uncle Harry Bernau had landed a plum position collecting tolls on the parkway. In their spare time, Harry and his wife, Lillian, ran a small home business making and repairing saltwater fishing rods in their basement. From the sidelines of the Bernaus' workshop, Al would watch, rapt, as his uncle bound fiberglass poles with thread, firmly tying metal line guides onto the rods with tight loops. Lillian, with her steady hand, then coated the thread with layers of clear lacquer to hold the line guides fast. In that basement, Harry built his own metal lures, designed to dip and wobble in the surf to attract the attention of curious striped bass. When Al finally convinced his uncle of his serious interest in fishing, Harry helped him buy a new state-of-the-art spinning reel, a black, riveted device with an embossed Garcia Mitchell logo in curling script.

As Al found solace with his uncle during those troubled years, his extended family began to pressure his father, Arthur, to make a fresh start for the sake of his mentally ill wife and his sidelined son: it was time for him to take responsibility, they lectured. Eventually, Arthur caved and made a plan. One afternoon, he picked up Isabelle and Al, then 14, and drove them back to Safran Avenue, the street where Al had been born, to proudly tour them around a vacant lot. Al found it unappealing and scrubby, a postage stamp of land filled with large trees along a trickling creek. But Arthur had a surprise for Al: he planned to build a house there for the three of them, with the help of his brothers. This was also how Al learned his parents were reuniting.

With their newly re-formed family unit on a tight budget, Al often worked as his father's only helper. He watched as a backhoe dug the foundation. His father set up string lines for its poured concrete slab and used cinder blocks for its basement walls. Al worked alongside his father and uncles, learning how to use a saw and how to finish a joint—and that nothing got done unless you did it yourself. Al took that last lesson deeply to heart.

One blustery fall afternoon, Harry's brand-new black Mercury sedan rolled to a stop in front of Al's home. Fords was still in its postwar boom, fueled by demand for labor and materials from nearby New York City, and new houses like Al's were popping up like weeds in sidewalk cracks. Reaching his destination, Harry stepped out onto the sodden grass in front of a small bungalow. He scanned the house as Al, by then a tall, lanky teen with wavy black hair, opened the front door and made his way down its front steps.

After they'd greeted each other, Harry stood back and opened the Mercury's smiling black trunk. With a clunk and a swing, Harry revealed his prize: three fat striped bass, so fresh they were still moist. The fish, all as long as a man's arm, wobbled on opened sheets of newsprint, their bulbous eyes luminous and clear. Al's eyes widened. Harry had caught them that morning in the Sandy Hook surf, about an hour's drive south, using a thread-wrapped rod and curved metal lure, gear he had hand-built and hammered himself in his basement workshop. The teen drank in his uncle's pride. The showy car, the gleaming fish, the braggadocio—all of it dazzled. "Boy, oh boy," he thought. The glamour and accomplishment cast a spell over Al, hinting at a thrill he'd chase all his life.



In 1958, at the age of 20, Al enrolled in New Jersey's Fairleigh Dickinson University, breathing a sigh of relief at the chance to leave his parents' emotionally chilly home. When he left, he also packed his rod and tackle box. One day during his freshman year, Al spent a morning fishing trout with a friend in the nearby Hackensack River and lost himself in the reverie of casting and reeling. When he realized he was late for class, he sped back to school in his secondhand Chevy. Bursting into his biology classroom, he sheepishly pocketed himself into his seat with a squelch—he was still wearing chest-high rubber waders and a fishing vest. After class he gutted a fresh sackful of trout in the classroom's laboratory sink.

Al approached making friends strategically. In his sophomore year at Fairleigh Dickinson he pledged to the Epsilon Nu Delta fraternity, a less-popular group of lower-income aspirants who had been passed over by other Greek clubs. (Some called the group "the Poor Fellows.") During pledging, one fraternity brother drove and dropped Al and two other students in the boonies of New Jersey, only for Al to realize they were near a familiar trout hatchery. He led the small group to a nearby diner, where they thumbed a ride back to campus in the cab of a tractor-trailer and arrived back in record time. Al's peers elected him senior class and fraternity president, and his numerous athletics trophies—basketball, fast-pitch, cross-country—jammed the top of his dormitory dresser. In his senior year, Al met and courted his first serious girlfriend, a woman named Bonnie, while he worked as a clothes model and stock car driver for hire at the local quarter-mile racetrack.

For a year after graduating in 1960, Al worked in a laboratory at the University at Buffalo's school of medicine. He spent hours cleaning glassware, eventually working his way up to running the lab's then-state-of-the-art ultracentrifuge. Every weekend, he drove his Chevy the 600-mile round-trip back to New Jersey to visit Bonnie. He continued to fish, one time winning a university contest for trout fishing in the Delaware River. In 1961, he was offered a graduate assistantship in fish parasitology at Long Island's Adelphi University, and he and Bonnie married that summer. By his own account, he left the University at Buffalo a "cum laude graduate of wild brook trout fishing."

Within months of tying the knot, Al and his wife received a letter from the Nassau County sheriff's office regarding a string of tampered mailboxes at apartment complexes. In the letter's aftermath, Al realized Bonnie had spent all the money he had given her monthly for rent and that their landlord had had never been paid, nor had several of their credit card accounts. Bonnie skipped town in his car, leaving Al deep in debt, heartbroken, and living in an apartment he could barely afford. For weeks, carless and broke, he hitchhiked to campus. It was at this juncture of his life Al started the unusual fishing practice that would become his signature.

Starting in 1961, a newly single Al often risked missing his morning classes to catch a few largemouth bass in Long Island's Lake Ronkonkoma. Standing on its sandy beaches, the lanky, square-jawed young man squinted into the sun past his battered baseball cap as he cast his line. He always tried to arrive at the lake when it was still dark, when the incoming day barely tickled the horizon



in purple and mauve. It was the best time, he knew, because it was the best time to catch fish.

He picked a prime stretch of beach, setting down his carefully organized tackle box and the prized Mitchell García rod and reel his uncle had given him a decade before. His leather loafers shifted on the fine sand as he pitched his line toward a sunken trailer that lay on the lake's dark bottom. The trailer's corroded nooks and crannies provided perfect cover for the schooling largemouth bass that darted among the gooey algae and floating candy wrappers. The bass chased minnows and leapt at insects that hovered too close to the surface, and were, as he joked, "highly cooperative" and easy to catch. He tempted the school's ancient feeding instincts with his lures, getting their attention with short, jerking movements from his wrist, his rod's light linen line flashing in the growing morning light as he pulled in fish after fish.

One day, he brought a spool of copper wire to the lake to attempt something new.

Once a bass took his hook and he had drawn it close to shore using his rod, Al lifted it out of the water with a fine-meshed net; the finer weave was gentler on the bass's delicate skin and made it easier to scoop up its slippery, forest-green body. On his hands he wore thin, tight-fitting white cotton gloves to improve his grip and preserve the fish's veil of protective slime. Clenching the shimmering, flopping bass firmly with his left hand, its flesh bulging slightly under his long fingers, he used his right hand to pick up a straight, thin, finger-length scrap of copper wire he had pre-cut off the spool. With a downward poke he jammed the wire's sharpest end through the upper back of each fish, near its dorsal fin, as the fish kicked against the sensation. He quickly twisted

the open ends of the wire closed and released the bass back into the water. It was the first fish he ever tagged.

For months, Al fished near the sunken trailer, catching and tagging dozens of largemouth bass using the same technique. One day he realized that he had tagged the same largemouth bass six times—as he pulled the flapping fish from the water, sunlight flashed on five previously inserted copper wire tags poking from its back. Despite its crown of metal, Al marveled, the bass seemed to be perfectly healthy and unaffected by the multiple perforations; it still fought his rod vigorously each time and the multiple tagging holes had healed tightly around the copper wire. Touching their sharp tips before releasing the bass yet again, Al found himself entranced by what those multiple tags indicated: this was a small but healthy population of bass, in balance with the man who was fishing from it. He didn't worry much about whether his tagging hurt the fish: at the time, popular understanding of animal cruelty extended only to specific mammals such as cows, bears, dogs, and chickens. Fish, without facial expressions or the ability to make noise above water, remained in a lesser category.<sup>1</sup>

A personal interest in tagging galvanized Al's fishing, but by 1964 he still hadn't figured out how to dovetail his love of fishing with how to earn a living. Wanting to be close to the ocean, he applied and was accepted into a PhD program in parasitology at the University of Rhode Island. There he befriended one of the school's prominent fish scientists, ichthyologist William Krueger, and bought a leaky 14-foot-long Bristol skiff with a 20-horsepower Evinrude outboard motor he towed on a small trailer. During the day Al researched *Austrobilharzia variglandis*, the parasite that



causes clam-digger's itch, and studied his dense copy of *Chapman Navigation Rules* late into the night. Regardless of where his academic career went, he decided, he would eventually become a licensed charter captain.

In 1967, Al started tagging striped bass using tags purchased from the American Littoral Society (ALS), a New Jersey-based environmental group dedicated to promoting the study and conservation of marine life and habitat in the US Northeast. ("Littoral" means "near the coast.") Founded two years prior, the ALS tagging program was one of the first recreational tagging programs in the United States, although research tags had been deployed by scientists there since 1873. Al fumbled and splashed around in those earliest formal tagging attempts, struggles that reminded him of the slapdash antics in the Marx Brothers' film *Mixed Nuts*. (It was this nickname he gave his and others' first tagging expeditions and a name he later gave his first five-meter Boston Whaler.) But eventually he figured out a smooth system for tagging stripers and grew to love the work, announcing to incredulous charter clients and anyone else on the docks within earshot that the society's goal was to turn fishermen into scientists. Still, he took care to ensure clients' coolers brimmed with fish before suggesting catch-and-release. Most weren't interested at first—what was the point of paying hundreds of dollars for a single fishing trip if you couldn't even eat what you caught?—but Al worked on selling the idea to fellow fish enthusiasts.

He was also attracting a new wave of clients interested in catching Atlantic bluefin tuna, a warm-bodied fish with a reputation as a hard fighter that schooled off Rhode Island's coast by the thousands.

In the 1960s, recreational anglers increasingly headed to Block Island, Al Anderson's favorite fishing hole, in search of big bluefin. Most giant bluefin in the region averaged between 280 and 600 pounds, although bluefin off the Canadian province of Nova Scotia, some gossiped, grew many times larger. In his earliest angling days off Rhode Island, Al had cursed the numerous schools of small bluefin tuna that blasted past his striped bass lures. Sometimes they stayed far off the coast; on other, rarer days, bystanders on New England's coastal beaches could see them leaping offshore. They were a pain in the neck, those fast, powerful fish that took his lures and broke his lines. But they were also fun to catch.

The fish's speed intrigued marine scientists like Frank Carey, a Woods Hole Oceanographic Institution biologist who, working alongside fellow researchers, first identified the mechanisms behind the bluefin's warm-bloodedness in 1966. The species' ability to regulate its internal body temperature manifested in powerful ways, including the bluefin's ability to preserve the warm tone of its muscles, and therefore speed and strength, even when swimming in chilly waters. French oceanographer Jacques Cousteau once described the experience of swimming alongside a school of 60 giant Atlantic bluefin tuna in the Mediterranean as fishermen hauled in the net in which they were trapped. As the net shrank to a third of its former size, the tuna exploded into a frenzy. "With the seeming momentum of locomotives, the tuna drove at me, head-on, obliquely, crosswise. It was out of the question for me to dodge them," he wrote in *The Silent World*. "Frightened out of



sense of time, I . . . surfaced amidst the thrashing bodies. There was not a mark on my body. Even while running amok the giant fish had avoided me by inches, merely massaging me with back-wash when they sped past."

While the bluefin's precise vision and powerful speed were the culmination of millions of years of evolution, they were no match for the increasingly industrial capabilities of global fishing fleets. For decades starting in the postwar years, longliners and similarly high-capacity purse seiners had arrived on American and Canadian coastlines from all over the world, from Japan, Germany, Spain, and other countries, to catch bluefin en masse.<sup>2</sup> When they set lines or corralled their purse-shaped nets tight around giant schools of fish, their crews and captains often weren't picky about the size of fish they caught. These ship's crews primarily pursued smaller bluefin, as customers preferred the fish's medium-pink flesh. Sometimes they even threw away any truly giant fish or "granders"—fish weighing more than 1,000 pounds—because their blood-flushed red-purple flesh couldn't fetch the same price per pound at the canneries dotting the Atlantic coast. They preferred the lighter-colored meat of the albacore tuna, which was widely used in the tuna casseroles and vegetable-specked nouveau salads that adorned midcentury party spreads. For years, the market delegated darker bluefin as a poverty fish, good only for cats and Italian immigrants who could be convinced to buy it canned and cheap by the box.

Purse seiners often deeply bruised the fish they caught, crushing their small bodies under the weight of so many tonnes of creatures—nearly any ocean animal you could imagine—pulled together and dragged aboard the vessels. In these writhing,

multi-tonne nets, countless bluefin died by suffocation. Their raw, venal gills pulsed open and closed as their blood oxygen levels dropped and eventually their hearts stopped. At times, there were instances where a ship needed only, say, 7 tonnes of tuna. If its crew caught 90 tonnes, that meant 83 tonnes tossed overboard. In the early 1960s, "several generations of tuna were wiped right out," Al once wrote, while accidental breakage of nets often killed hundreds of tuna at a time. It was a meaningless, pointless death (or the efficient disposal of bycatch, as far as many of captains and their boats' shareholders were concerned), but in either case the waste was considered a necessary side effect. Sacrifices must be made, the reasoning went, to fill the maw of the world's newly emerged global fishing fleet and its customers.

Back then, the value of bluefin flesh hovered around five cents per pound, far less than bass or trout. That meant fishermen had limited options when it came to getting rid of their tuna catches: "You would either take a picture and let the fish go," Charlie Donilon, a Rhode Island captain and tuna industry veteran, told me, "or you'd bring it back to the dock, hang it up, take a picture with it dead, drop it back in your boat, and then go outside the break wall and dump it." A third option involved paying a truck driver to haul the giant fish to New York City. But if the fish sold for less than the driver's time plus fuel, the fisherman owed a debt for a fish no one wanted.

Still, during bluefin tournament time, it wasn't unusual to see a gape-mouthed giant tuna tied to a car's roof, displayed like a trophy buck during hunting season. Other times, fishermen would try to transport bluefin home in their trunks, which made their cars sag so deeply that their exhaust systems were in danger of



bumping off on the rural Narragansett roads. "The odor of fish pervaded the car's interior for months to come," Al once observed, "forcing the sale of a vehicle in one known instance." There was something about those mighty fish that captured imaginations. For Al, it was the start of a fixation that would last until his final days. But the biggest bluefin rush had yet to come, and he had already positioned himself at the heart of a fishery for what was set to become the world's most valuable fish.

## CHAPTER TWO

### "YOU DAMNED WELL BETTER TAG"

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Al, 1960s

Who has known the ocean? Neither you nor I,  
with our earth-bound senses.

—RACHEL CARSON, "UNDERSEA"

Putting out in his first *Prowler* on New England's waters throughout the 1960s, Al Anderson marveled at the show Atlantic bluefin put on, often while feeding in a greasy slick of chum alongside his boat's gunwales. As he got better at finding and catching bluefin, he found himself increasingly obsessed with gathering data and learning about the powerful fish, including how they grew, moved, and migrated, and where they went after disappearing under the gunmetal blue chop.

Physiologically, a bluefin's body is nearly pure muscle. Its fins can be retracted into shaped hollows along its body, and its eyes sit flush to its head. Scientists have speculated that the yellow



spiked finlets along its back and belly help reduce turbulence in the water at high speeds. First diagramed in 1978, the bluefin's "thunniform" swimming technique involves little, if any, head movement. That, paired with strong, rapid back-and-forth kicks from a powerful jointed tail, allow the fish to maintain high speeds for long periods of time. Growing up underwater, a bluefin like Amelia would have schooled with bluefin approximately her same size, not with a family group, as she hunted and rested. The position she held in the school would have shifted often and changed with the currents and circumstance: tuna often swim in soldier formation, moving side by side in a single horizontal row at the same depth, but have also been observed from the air in spinning-wheel-like formations and densely packed domes at the ocean's surface. "Sometimes schools of bluefin swim under the curl of a wave, stacked like a flock of birds," Douglas Whynott writes in his book *Giant Bluefin*, "as though trying to get a look at the upper world from an aquarium window."

For a fish with very little color, a bluefin's typically muted skin has an otherworldly capacity to shift into a rainbow of colors—silver, gray, black but also blue, purple, orange—that shift and shimmer. Like octopus and squid, the species has skin that evolved with pigment-producing chromatophore cells controlled by the animal's central nervous system. In a way, a bluefin's colors are like a tree's leaves in autumn: as a tuna fights and those cells expand and contract, its skin puts on a vibrant display fishermen call "flashing." While catching and tagging, Al sometimes found himself flabbergasted by the fish's beauty as its skin morphed before his eyes, turning spotted, or variegated, or even striped dark and light like a zebra's coat.

Omnivorous in his search for better ways to tag fish as he had first done in that fall of 1961 on Long Island, Al sat at his small desk and immersed himself in an emerging wave of scientific research into bluefin tuna, marking up magazine articles and scientific studies with scrawls in the margins and pinning them up in his office. Many of those academic papers had been written by a Massachusetts-based scientist named Frank J. Mather III. Born in 1911, Mather was a hobby fisherman and well-to-do son of a famous art historian. He built his career on a class of ocean-spanning fish called pelagics—a term drawn from oceanographers' name for the mid-ocean region between the sea's floor and surface, which is, by volume, the largest habitat on Earth. Bluefin tuna are pelagic, as are marlin and swordfish, and for Mather they were the ultimate catch. During the Second World War, Mather worked in New York City as a naval architect for the US Navy. After the war he pursued his teenage dream of studying fish and lucked into an early career position as a research associate at Woods Hole Oceanographic Institution simply by being one of the few showing interest in the field.

At the time, marine scientists knew very little about bluefin—where they spawned and migrated, or how they grew or pursued prey. There were large concentrations of the fish off Nova Scotia and Bermuda, the North Sea and the Mediterranean, but their lives in between those points were largely a mystery. As of the mid-1950s, most international government-funded fisheries research, according to Mather, focused on how to exploit big fish as an industrial resource. Consequently, as Mather wrote, their programs were aimed "chiefly toward discovering new tuna fishing grounds, and toward determining how to regulate fishing so as to



get out of tuna resources the highest sustainable harvest." Filling this gap between commercial, game, and research fishing, Mather proposed, would be his Cooperative Game Fish Tagging Program, a first-of-its-kind research program that would work with recreational fishermen along the Atlantic coast to catch and track tuna and other saltwater giants.

"No one has yet succeeded in tracing the migrations of any of the great game fishes by tagging," he wrote. "If anglers believe it important to learn about these species on which their recreation depends—and they should, for the purposes of conservation . . . —the necessary research will have to be done almost entirely by privately endowed marine laboratories." In requesting a \$50,000 budget (half a million dollars today), Mather transformed his weekend hobby into serious scientific research. At first, many northeastern fishermen rejected the idea of tagging bluefin, some thinking that Mather's studies would only help other fishermen, particularly those in other regions of the Atlantic, catch more of "their" fish. But others were more easily persuaded. "The only way we are going to learn anything about the fish is through tagging," Mather once told Bob Linton, a well-known boatbuilder and charter fisherman who fished offshore for tuna throughout the late 1950s and early 1960s. Thanks to Mather, Linton's curiosity outweighed his trepidation and he became one of the first charter fishermen to tag for the researcher. The scientist's undeniable logic, as Linton once told Al, "made a lot of sense."

Mather, along with a biologist named Howard Schuck, tagged his first tuna by inserting a stamped, numbered hook through the fish's jaw off the coast of Bimini in the Bahamas in May 1952. (The early technique was based on metal ear tags attached to cattle.) That fall the two scientists went "through the roof" with

## "You Damned Well Better Tag"

astonishment when a Nova Scotia tuna trap owner called Schuck with news of the fish's recapture thousands of kilometers north from where it had been tagged. Within a few years, data was rolling in from around the world as fishermen caught and reported the recapture of Mather-tagged bluefin tuna. In 1962, one fish tagged off the Bahamas migrated nearly 10,000 kilometers in 50 days and was caught off Norway's coast. That fish moved at such high speeds that it traveled a distance of nearly five consecutive marathons every day for more than a month.

The simple science of counting and recording fish tagging data has been practiced sporadically in Europe since the mid-1800s, when curious Scottish landowners tagged salmon and trout running through their properties to see where they ended up. Before that, Indigenous and early European fishers engaged in a more informal version of the practice, recognizing and drawing meaning from the rediscovery of their own and others' handmade hooks lodged in the mouths of recaught fish.

By marking a fish and releasing it, modern scientists can plant an irrefutable data point, a record of that one fish caught in a particular place at an exact size and weight. If a fish tagger catches and tags 100 more fish, the likelihood that a tagged fish will be recaught goes up. When that happens, it then becomes possible to plot where a single fish has traveled and grown over time. Tag 1,000 more fish, and the confluence of data creates a map bristling with meaning, packed with information on where fish are born, where they die, how fast and where they travel, and whether their communities are healthy or at risk of being wiped out.

Imagine you have 100 apples in a pond, and only 1 has a sticker



on it: the likelihood of dropping a net into the water and scooping up the one with the sticker is low. But if there are 5 apples left in the pond and only 1 has a sticker, and it's netted repeatedly, then that's statistical evidence of fewer apples in the pond. If many thousands of bass lived in Lake Ronkonkoma—Long Island's deepest and largest lake—it was unlikely Al would catch the same fish repeatedly. Yet there he had stood, casting toward that sunken trailer, catching and freeing the same fish again and again. The recatching itself had meaning: it meant he was fishing into a small, relatively static population, so if he had caught and kept every fish, the population could disappear. Instead, thrilled by the discovery, he continued to set most of them free.

In 1967, after years of hearing about Mather's work on the docks, Al and Mather connected and the two started corresponding by post, trading pleasantries and swapping data and ideas. Mather asked if Al would contribute to his tagging efforts, and the fisherman felt honored to be chosen as a collaborator. Some of the earliest devices Mather, Al, and other early taggers used to mark tuna were modeled on shark tags, which had stainless steel tabs that expanded inside the fish to hold the tag in place. They easily stayed lodged in slower-moving sharks, but in bluefin, which reach speeds of up to 65 kilometers an hour, friction caused by high speed could pop the metal tabs right off. As they collaborated on new, better ways to tag bluefin, Al helped Mather develop and prototype a plastic dart, with a similar silhouette to the expanding plastic anchors used to hold screws in a wall, that embedded and locked a few inches deep into a bluefin's flesh.

Once a tuna is caught, the most critical aspect of tagging is keeping the fish alive. Water must pass constantly over a bluefin's

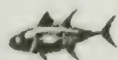
gills or it will suffocate, so each fish has to be tagged extremely quickly. Most taggers use a tuna tagging stick—essentially a wooden broom handle with a steel spike on the end—to insert a tag in a tuna's back, near its front dorsal fin. When dragging and tagging a fish off the side of a boat, which many captains prefer, long sticks work best; for captains who prefer to land and tag fish onboard their boats, a shorter sawed-off stick works better. Some even pump saltwater into a fish's mouth and past its gills to make sure it's getting enough oxygen. In the latter case, Mather encouraged fishermen to use wet gloves when taking a fish out of the water, to avoid picking it up by the tail, and to work as quickly as possible to get the fish back in the ocean once it had been tagged.

The next most important element is the collection and recording of data, including the date, the GPS coordinates, how long the fight with the fish lasted, and the fish's length, as well as names and contact information for either the angler, the captain, or both. In filling out these tiny cards, Al's ability to notice any small detail awry echoed satisfyingly. As his father had taught him on his family's childhood construction site, details mattered, and Al regarded those hundreds of forms as part of his personal scientific journey: every fact mattered.

In his magazine articles, Al extolled the satisfaction and karmic virtues of bluefin tagging, which, he always said, started with a fisherman gathering supplies: tagging cards, tags, a tagging stick, and gloves for grip and to prevent damaging the fish's skin. Once an angler hooked a fish, Al recommended letting it "catch its breath" in the water alongside the boat, especially after a hard fight. Using a wet glove or a snare, he'd hoist each fish aboard by the head and tail, laying it beside his carefully arrayed materials



and tape measure. Once he inserted the tag and recorded the fish's length and weight, he'd slip the fish into the water headfirst, letting oxygen flow into its mouth and across its gills before setting it free. "Mather was a strange duck," Al told a magazine reporter, reflecting on their tagging work decades later. "[But] when you made a commitment to tag for him you damned well better tag."



**LONG BEFORE YOUNG** Al found refuge from his problems in recreational angling, long before even the dawn of industrialized fishing, the earliest human coastal communities relied on the sea to survive. The practices, failures, and smokehouse-filling successes of our ancestors were the earliest form of hypothesis testing on the ocean's rhythms and bounties: for those living inland, sourcing ocean-caught fish for a meal was difficult and expensive, and any producer transporting fisheries' products inland was forced to preserve them—either by salting, drying, smoking, fermenting, or using a combination of those techniques—before risking a long journey and a wasted shipment. Early coastal peoples depended on what they harvested from the sea, but the quick perishability of those products and localized catches meant that catching and eating fish remained intensely regional.

To succeed, early humans had to adapt to their environments. Where fish were plentiful or ran past communities on tides, stone weirs and woven nets often were the most successful. Where fish

were large and could be cornered or baited with lures mimicking insects, harpoons or baited hooks worked better. Archeologists have found fish spears more than 90,000 years old and fishhooks 20,000 years old. Some of the earliest human communities, like those living in modern-day East Timor in Southeast Asia, depended heavily on fishing for food during an age when ice still encased most of North America. Stone sinkers weighted down land-based nets in modern-day Russia between 10,000 and 8,000 years ago—a period when cheese and winemaking first developed—while carvings more than 4,000 years old depict ancient Egyptians fishing with lines and nets from papyrus boats.

The ancient Phoenicians, whose culture peaked between 1100 and 200 BCE, originated many fish-catching technologies and techniques that were later widely used across northern Africa, southern Europe, and eventually North America and the world's burgeoning colonial outposts. By the time Al started fishing, these technologies had evolved to use modern materials and manufacturing, but all would have been recognizable to the ancients. There are, after all, only so many ways to pull fish out of water efficiently. Notably, this included the Phoenicians' use of weighted setnets and seines—deep nets gathered into a semicircle against a beach—to corral tuna as they migrated. Previously, Indigenous tribes in North America's Pacific Northwest coast used similar innovations, weaving nets from nettle fibers, spruce roots, willow, and cedar bark to capture the region's pulsing runs of salmon. For both these groups, larger catches made possible from the labor of fewer people meant an escape from hunger and later poverty, especially when paired with early preservation techniques like salting and smoking. Rich in fatty acids and protein, fish provided



sustainable and certainty in largely uncertain times and came to form the nutritional backbone of many ancient societies.

Waves of technological advancements transformed a way of life into industry. For example, the precursor to today's modern propeller-driven trawler, a ship that catches fish by trawling the ocean floor and can devastate swaths of healthy ecosystems, was a Dutch vessel called a *dogger*. Builders modeled the square-sailed late-1600s vessel, which could carry about a tonne of bait and three tonnes of salt, on the sturdy remains of Norse ships. *Doggers* also carried a half tonne of food and a half tonne of firewood to keep the crew warm and fed on the frigid North Sea.

This scaling up of technology and mechanization troubled British fishermen as early as 1576, when one group submitted a petition to their country's Parliament objecting to the use of a new device dubbed a *wonderchann*. Their formerly "plenteous fishing," they contended, had been wiped out by fishermen using destructive gear towed along the seafloor: a wooden beam three meters wide towing a five-meter-long net weighted with lead-threaded ropes and stones. That government eventually introduced bans and restrictions on the devastating devices, and two British fishermen were executed in 1583 for using metal chains on their trawls. Still, ships under sail pulled trawls throughout the 1800s, and in 1863 one witness told a British royal commission charged with investigating the practice that trawling, in fact, helped the ecosystem and provided more food for fish. It did, in a way, as dead and dying creatures left in the wake of a first trawler attracted waves of opportunistic scavengers that were often caught in a subsequent trawl.

It was especially challenging for early scientists to learn about

the ocean, which was harder to study than a forest or a desert, given the tools and technologies of the time. Until the mid-20th century, they largely relied on catch statistics gathered from fishermen and were forced to piece together the rest with observation and argument. The ocean held us at arm's length for centuries, and in the absence of good information to prove otherwise, many humans simply treated the ecosystem and its creatures as if both were infinite.

These patterns also extended to colonial expansion. As settlers arrived in North America, they swiftly ran roughshod over sustainable Indigenous fisheries management practices that had kept salmon, crab, and groundfish populations like cod, haddock, and pollock healthy for generations. Within two decades of British rule in the Canadian province of British Columbia, for example, the epic, splashing runs of huge coho and Chinook salmon up Pacific Northwest rivers had been decimated. Some of the earliest fisheries data collected by colonial governments were landing records of how many fish had been caught annually and where. They didn't do this to protect species; they were politically motivated attempts to control and profit off the growing industry. The ocean was the limit, but the ocean was limitless.



**GROUPS OF FISH** have historically been called "stocks," parlance for a manageable resource of domesticated animals such as cattle or other farm animals, and the conservation of fish stocks first



emerged as a political issue as early as the 16th century. Since medieval times, communities, regions, and guilds enacted laws or made agreements with other bodies to regulate gear, fishing location, and methods. Formal bodies instituted to regulate fishing have existed in countries including Japan, France, and Spain since the 17th century. But with a shift toward capitalist and colonial extraction methods, and as the available technology to catch fish and travel the seas improved, by the 1800s it had become clear that the number of fish pulled from the ocean would continue to increase exponentially.

These huge, heaving fish populations, once Europeans became aware of them, were fated to be pursued in bigger and increasingly intense ways. In the late 1800s, a Scottish shipbuilder invented the steam-powered trawler, which, given its faster speed and potentially heavier load capacity, could outstrip the range and carrying capacity of the best sail-powered equivalent. Steam's heyday remained brief, however, and in 1910, French boat designer Benjamin Bénéteau launched the first motorized sardine fishing boat, the *Vainqueur des Jaloux*, which, roughly translated, means "conqueror of my haters." The vessel briefly caused outrage in nearby fishing communities that accused the "oil boat" of scaring fish away, but, as with most new technologies, fishermen quickly adopted the efficient design on both sides of the Atlantic.

Between 1901 and 1945, worldwide catches of fish every year reached 15 million metric tonnes, or the weight of more than 140,000 blue whales. Responding to this booming supply, a new wave of entrepreneurs and technologists arrived in the fishing industry throughout the early 1900s. On Terminal Island, home of Los Angeles's new railway terminal, the California Fish Company produced America's first canned tuna in 1903. It marketed the

meat as a passable replacement for chicken, and the island's community of Japanese immigrants proved themselves to be adept at catching albacore and bluefin tuna. By 1907 there were nearly 600 Japanese fishermen working from the island. "The supply of tuna is inexhaustible," declared the son of the company's founder.

It was at this moment in human history that the very idea of catching fish and selling them to consumers started conforming to suit the needs of the globalizing industry. Fish in volume can feel inconceivable—speaking from personal experience, even a small commercial net full of thrashing fish sounds like the deafening hammer of torrential rain on a tin roof. As ambitious entrepreneurs would discover, fish sold in volume were easily commodified, and could be reframed by business vernacular into flattened economic units. And so capitalism again transmuted once-living creatures into a product ready for human consumption.

Innovation at sea only accelerated the change. In 1954, an 85-meter-long ship called *Fairtry* sailed the Atlantic for the first time. Designed with a hauling mechanism at its stern and an on-board fish-processing factory, the trawler could lift 55 tonnes of fish in a single catch.<sup>1</sup> Across all these technologies, the fact that commercial fisheries had become a race to the literal bottom seemed undeniable, even at a time when humans considered the ocean largely inexhaustible. More fishermen fishing from more boats were pulling more fish from the ocean, so boats needed to travel farther afield to catch the same numbers of fish. That meant more attention paid to species that schooled in nearby waters and could be sold at prices worth a day's fuel: species like bluefin tuna. By 1954, the United States had become both the world's largest



producer and consumer of canned tuna, with every American eating nearly two pounds of canned tuna on average that year.

Between 1961 and 1965, Japanese longliners tripled their annual catch of bluefin, from 10,000 to 30,000 giant fish, to respond to domestic consumer demand. As Japanese diners' appetite for bluefin grew unchecked, and the price it commanded at Tokyo's Tsukiji market spiked, fishermen fished the closely related *Thunnus orientalis* with increasing fervor and it began disappearing from Japanese waters. That meant Japan's factory ships had to travel farther afield to fill the market's slick early-morning auction floors. Some of those ships ended up on the shores of the western Atlantic, where fishing for bluefin remained, at that time, a free-for-all.

The historic relationship between North American sportfishermen and giant bluefin was one Japanese fishermen had heard about, but until populations of their own Pacific bluefin started to drop, making the long voyage to North American wasn't worth the effort. But by the late 1960s the economics of the fishery meant branching out. For middlemen who just wanted to buy fish from American and Canadian fishermen, it helped that they were selling bluefin off the boat at laughably low prices. It was an appetite that established and fueled the global slaughter of bluefin that, by the following decade, changed the fishery forever.



**OUT ON THE** water throughout the 1960s and 1970s, Al found himself dodging the looping paths of giant purse seiners and

trawlers. What they were engaged in could technically be called fishing, but to Al, what he did and what they did were so far apart as to be nearly unrelated. He was a mariner of experience and instinct, analyzing and gathering data, getting to know the individual rips and currents of the waters off Block Island by heart. In his daily fishing log, he kept detailed notes on wind speed and direction, temperature and time, recording both his daily plan and the rhythm of catches, and where and how deep fish had been found. With a disquiet he couldn't quite place, he watched huge fishing vessels cruise along the horizon, forced to only imagine the size and scale of the tuna they were pulling aboard. Still, even they had a role to play in tagging: early in the 1960s, Frank Mather earned the trust of some of the earliest bluefin purse seiners, and they agreed to allow taggers on board.

According to one fish story documented in Whynott's *Giant Bluefin*, it was a few years after the seiners arrived when a harpooner named Bob Sampson pulled up alongside one to try to nab some big, easy fish. He saw two men in wet suits walking inside the boat's tightly pulled purse seine net, and while he watched, the two men released a big tuna from the net. Sensing easy quarry, Sampson harpooned the fish, and just as quickly one of the men in the net started screaming at him. What he didn't know at the time was that the fish had been released as part of Mather's tagging program. "[Captain] Frank Cyganowski told Bob he could get \$5 for returning the tag," writes Whynott. "Bob, not to be outdone, backed up the boat, handed over the tag and asked for his \$5—after all, it was a free-swimming fish."

For Amelia's recent ancestors—those Atlantic bluefin tuna swimming off the eastern seaboard throughout the 1960s onward—the



region's increase in nautical traffic would have also increased the ocean's natural cacophony. One study by Scripps Institution of Oceanography, based on declassified naval documents, found ocean noise off Southern California increased by tenfold between 1964 and 2004. Italian researchers have found schooling tuna change depth and swimming patterns in reaction to boat noise, so for bluefin tuna, which can likely hear frequencies between 200 hertz (a foghorn) and 1,000 hertz (a flute), that increase ratcheted up the ambient chaos. They were not only increasingly being pursued over wider distances but also finding it harder to escape humans' clamor.

When he first started catching and tagging bass on Long Island, Al didn't know the term "citizen science" because it hadn't been coined yet. A writer first used the term in a 1989 article in *MIT Technology Review* describing acid rain sample collection by Audubon Society volunteers. The society had long led in that kind of public-facing data collection: in 1900 ornithologist Frank Chapman organized the group's first Christmas bird count, in which 27 volunteers observed 90 different bird species. Mather had already sold Al on the power of carefully collected fishing data, which he had known intuitively ever since he started tagging bass in Lake Ronkonkoma.

As he continued looking for clients who wanted to tag and release fish, Al grew increasingly frustrated by how both striped bass and bluefin populations seemed to be thinning. Every year it seemed harder to find fish for his clients to catch, a trend he had observed ever since the big ships showed up. In the late 1960s the bluefin population had been "ripped apart" by a canning boom on the eastern seaboard, he complained. And massive seiners plundering its waters still netted many times more than his annual

catch in a single day. It was a "massacre," he told his friends, one that would indefinitely prevent the bluefin population from recovering.

As Al started focusing on selling his fish-tagging charters to corporate groups, he often found his schedule completely booked up during the busy season, even though he charged as much or more than many other Rhode Island captains. It seemed too good to be true sometimes: catching fish without all the gutting and filleting, plus he got to experience the thrill of convincing other anglers of the joys of releasing a fish instead of killing it. Still, it was impossible to ignore the fact that every year he and his clients seemed to be catching fewer fish. Some days Al complained that the big seiners and draggers, most which flew under the flags of distant countries, should be blamed for the decline. Those foreign boats should be banned, some raged. The widely held sentiment that foreign boats should be banned—which sometimes manifested as xenophobic rants on regional docks across the United States and Canada—eventually grew into a political movement those countries' governments and others' could no longer deny.

During the Second World War, the United States established a secure zone off the Americas with the goal of preventing Axis-aligned ships from resupplying in South American ports. In the following decades, increasingly powerful and efficient fishing vessels from around the world ranged farther from their home countries and ports as fish stocks crept increasingly offshore. For coastal communities accustomed to an easy day's catch, the idea that foreign ships were taking "their" fish spread like wildfire,



including in immigrant-founded ports across the Northeast. It was this widely held belief—that other countries' rapacious fishing habits were to blame for the decline in close-to-home fish stocks—that help spur the formation of 200-mile "exclusive economic zones" around the world throughout the late 1970s and 1980s.

In 1972, 15 Caribbean nations held a conference to address "problems of the sea," where the concept of a "patrimonial sea" took root. This idea held that each country was entitled to exclusive rights to develop, fish, and conduct research in its own waters, while continuing to allow ships, aircraft, and submarine cables and pipelines unfettered access. A paper submitted in 1971 by the Kenyan government as part of pan-African conversations stated that the "present regime of the high seas benefits only the developed countries," and it defined and made a case for the establishment of exclusive economic zones that granted countries control over their immediate maritime resources—a definition that included fish. As conversations began at the United Nations to codify what would become the 1982 Convention on the Law of the Sea, 7 of 21 detailed sections on resources explicitly addressed what one report called "living resources."

After years of jockeying over details, including one 1974 proposal from Australia that highly migratory fish like bluefin tuna be managed internationally, rough global consensus was reached: coastal states would retain sovereign rights over the waters that abutted their territories, as well as the responsibility to ensure marine populations remained healthy enough to guarantee their continued survival. It was at this moment that a fisheries management tool called maximum sustainable yield (MSY), began creeping into government policy around the world. This concept, which

the historians and authors Carmel Finley and Naomi Oreskes have called "a policy disguised as science," eventually allowed the hollowing out of bluefin populations and countless other fish species across our oceans.

To understand how MSY became a cornerstone of global fisheries, one first needs to meet Wilbert M. Chapman. Trained as an ichthyologist at the University of Washington in the 1930s, Chapman spent a year and a half deployed in the eastern Pacific during the Second World War. His job was finding enough food to feed American troops stationed there, and he later returned to the United States passionate about the potential of that region's fish stocks—an opportunity that he said could be as profound as the harvest of buffalo in the American West. In 1948, he was hired as the country's first undersecretary of state for fisheries, a position in which he championed a policy of "maximum production of food from the sea on a sustained basis year after year."

The idea, as he saw it, was to allow individuals and companies to fish until fish stocks declined, at which point restrictions would be put in place. It was a theory based on four assumptions: first, that scientists could accurately estimate fish populations; second, that they could calculate when a maximum sustainable yield was reached; third, that they could then act quickly to implement fishing restrictions; and finally, that they would reopen fisheries only when they could prove populations were healthy. In 1950, Milton C. James, assistant director for the US Fish and Wildlife Service, wryly observed that a fisheries manager arrived armed with "vast, unorganized ignorance, illuminated by occasional



flashes of traditional legend, hearsay, inference, assumption, guesswork" and lived a "harassed existence." Even if a manager could protect a fish species by "leaning over backward in regulating [and] giving the resource the benefit of the doubt," there was still the risk of devastating the economic survival of "thousands of individuals, hundreds of communities, and dozens of counties." Fisheries science, it would seem, was an impossible, thankless job with no easy answers.

In 1954, biologist Milner Schaefer proposed a mathematical formula that attempted to describe the logic and science behind MSY. Schaefer, then the director of investigations at the Inter-American Tropical Tuna Commission, built his calculations on population-modeling equations first developed in the 1930s. He named his new model the "Schaefer short-term catch equation," and it, paired with Chapman's theoretical ideas, eventually evolved into today's modern understanding of MSY. Simply, it is the growth of a population of fish plotted against time as an elongated S-shaped growth curve, with the population initially growing quickly as it reproduces, eats, and then reproduces again. As population density increases, food, shelter, and mates become limiting factors, which slows population growth until it levels off at a carrying capacity. What Schaefer codified in 1954 was the idea that if a fish population was kept at half its maximum population size—with the midpoint of the S curve where population growth peaks—then fishers could reliably pull that number of fish from the ocean without wiping out a species completely.

As America entrenched MSY as the keystone of its fisheries management policy and international lobbying efforts, Al and other New England charter skippers continued fishing within

this novel and disrupted fisheries regime, trapped between quotas and commercial influence over the fisheries. The unfairness of that differential troubled Al: Why were he and his clients suffering when the fault lay with those entrusted to set sustainable fishing levels for both bluefin tuna and striped bass? "They don't care about the fish that are providing them a living," he told a newspaper reporter. "They don't respect the resource. They don't give anything back."

Many environmental scientists also felt discomfort with what they were seeing. In 1973, Canadian ecologist C. S. Holling published a paper suggesting that MSY "might paradoxically increase the chance for extinctions." Four years later, British Columbia-based fisheries manager Peter Larkin published an article calling for the death of MSY. While the model had once "established order of a sort," he called for a new model with "more sophistication." To conclude, he even wrote a funereal epitaph:

Here lies the concept, MSY.  
It advocated yields too high,  
And didn't spell out how to slice the pie.  
We bury it with the best of wishes,  
Especially on behalf of fishes.  
We don't know yet what will take its place,  
But hope it's as good for the human race.  
R.I.P.

Similarly discomfited by results of his experiments on the other side of North America, Frank Mather started warning other scientists and fisheries managers about continuing declines in



Atlantic bluefin tuna. He had already seen the devastating effects of the super seining fleet in the mid-1960s and believed his tagging work throughout that decade had played a role in encouraging greater conservation of the species. Still, that didn't keep him from avidly participating in the fishery himself, posing beside giant fish hanging on docks or chartering boats from Bimini to Prince Edward Island to cast his lines.

"I think it's a safe bet to say that if it were not for the tagging program," Mather told Al in 1989, "there would be very little bluefin tuna available today." Mather felt a personal connection to the fishery's origin. He had, after all, been an avid fisherman of bluefin himself and had grown up during an era when the bluefin-catching craze swept across the best anglers from around the world. He also knew how swiftly that frenzy could fundamentally transform a fishery. It was up to him and his colleagues, he felt, to temper the human urge to catch the biggest or most fish until there was nothing left.

## CHAPTER THREE

### AGE OF GIANTS


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#### Wedgeport, Way Back When

Why were you ever such a fool as to hook on to one of these giant creatures in the first place! You must have been mad.

But all fishermen are mad.

—VAN CAMPEN HEILNER, *SALT WATER FISHING*

 ver the blue-steel waves off Wedgeport, Nova Scotia, in 1935, the sun rose slowly and then all at once, first overtaking the morning stars, then teasing pink on the clouds, before finally splitting the horizon in two. Michael Lerner, a 44-year-old heir to a New York City clothing-store fortune, sat near the boat's bow, gazing at the ocean, as his guides Tommy Gifford and Lansdell "Bounce" Anderson chapped their hands on the oars. For hours already, their boat had bobbed fruitlessly without a single bite on Lerner's bait. Finally the rod twanged with the hit; it was a brutal, fast snatch. His quarry, at last.



The physics of Lerner's fight with the giant Atlantic bluefin tuna were simple: the tuna was 300 pounds of muscle hooked to a line made of 54 braided strands of spun linen. That line threaded through a rod held by Lerner, who had been strapped to a boat-mounted swiveling chair that prevented him from being pulled headfirst into the ocean. Catching a bluefin tuna on rod and reel required the skill, strength, and endurance of a world-class fisherman, and every piece of gear had to work—from the bamboo rod to its arched metal hook. And as of that day in Wedgeport, it had never been done before.

Deep underwater, the hooked bluefin followed instinct, kicking its powerful sickled tail as it rocketed away from the dory. Like a speeding car, it ramped up its speed, drawing on the digested caloric power of all the tiny fish it had eaten that week on the marine bank locals had dubbed Soldier's Rip, a bountiful patch of ocean about 15 kilometers or so offshore from the village. That power fed its warm organs and dense red blood, its thick muscles throbbing with lactic acid as it pulled and ran. The fish's pectoral fins slotted into its sides as it strained against Lerner's rod, its skin flashing a rainbow of colors in agitation.

The metal mechanism of Lerner's reel screamed as it spun, letting out line faster than his eyes could follow. Even still, the fish towed the wooden dory across the glittering chop. Lerner fought to keep line on the reel without breaking the tenuous connection. He knew it would be something like this, the world crystallized around his human body in a single second: water, wind, and sun; man and fish. But this wasn't a gentle tease from the ocean's depths. This was a tug-of-war with a bear. When Ernest Hemingway, a fishing friend of Lerner's, first saw a big tuna off the coast

of Spain, he was shocked at how the giant fish leapt clear of the water, falling back against it "with a noise like horses jumping off a dock." Anyone capable and canny enough to catch a fish that size, Hemingway wrote with awe, could "enter unabashed into the presence of the very elder gods."

After being dragged around the ocean for nearly half an hour, Lerner started to tire. But so, too, had the fish. With a final, deep tug, Lerner pulled the bluefin's gleaming, torpedo-shaped body alongside the boat, one smooth side of shimmering skin tipped toward the sky. A golf-ball-sized eye gleamed in its blue-black head, as its sharp pectoral fin slapped the air fruitlessly. The fish, already close to death, flapped its fins with exhaustion, yet it still took every sickled gaff and ounce of strength the three men had to pull its bulk over the dory's gunwale. No sooner had Gifford baited and cast the next hook than another tuna, this one even larger, was on the line. Within another hour Lerner had landed this fish too, also more than 300 pounds, before they called it a day. The trio headed back to port, Gifford and the mate pulling the boat's oars with bleeding hands and aching backs.



**DURING AN ERA** when commercial fishing and adventure-seeking tourism started to boom and converge, bluefin tuna transformed Wedgeport's fortunes. Under its cold waters, giant bluefin tuna schooled at the turbulent waters where two prevailing currents collided. From the surface, the rip appeared as a flat plate of ocean



ringed by curling waves that seemed to come out of nowhere, and for decades Nova Scotians had witnessed schools of huge tuna congregating there. Punctuated by a massive undersea bank that pushed nutrients and animal life upward toward the surface, tuna grew huge on that rip, plump from gorging on schools of herring, mackerel, and squid. Catching fish was easy on the rip, and catching fish was what had brought British and French colonizers to Nova Scotia in the first place.

Only a few days before he arrived in Wedgeport in 1935, Lerner had already given up on his dreams of catching a giant bluefin. The avid sportsman and angler had traveled to the remote southern coast of Nova Scotia to join paid guide Gifford for a week of fishing. But all the money in the world can't conjure a fish that doesn't bite, and they hadn't landed a single noteworthy fish. Frustrated and disappointed, the pair decided to head west by train and catch the next ferry across the Gulf of Maine back home to the United States. As their steam-powered train chugged along, Lerner couldn't bear its painfully slow speed. After long minutes of complaining, the pair lunged off their train car at the train's next stop, lugging bags, hats, and all, and flagged down a rickety passing car that, to Gifford's eye, looked like "one of the first automobiles ever made." They negotiated a fare, loaded their tackle, and bounced off heading west down the winding gravel road.

Driving along past wind-whipped pines and glacier-hewn boulders, the men eventually stopped for gas at a tiny, ramshackle stand. Inside, pinned to a plank wall, they spied a photo that beggared belief: a black-and-white newspaper clipping of a tuna larger than a boulder. At the bottom of the paper's curling edges someone had scrawled "1,100 pounds." Sensing possibility, the Americans interrogated the man behind the counter. That fish?

Sure, he said, in the region's lilting Acadian accent. That fish had been caught in Wedgeport, a fishing town to the southeast named for its triangular wedge of land that hangs into the chilly Atlantic like a lonely, thick icicle. That fish that inspired the pair to give bluefin fishing in Nova Scotia one more shot.

Late that afternoon, Lerner and Gifford sputtered into Wedgeport dusty from their journey and headed down a slope into the town's port, asking around for someone who could help them catch a tuna. In a town where women sold hooked rugs from the side of the road for cash and most men held down more than a few jobs, the money those American anglers threw around gleamed. After their first few queries, Lerner found Evée LeBlanc.

LeBlanc had ancestors who had been part of the region's early wave of colonial arrivals from France who, between 1755 and 1763, were forcibly deported from Nova Scotia to the United States by the British. But their connection to the region remained strong, and by the early 1800s, Acadians had resettled the western end of Nova Scotia's long horizontal coastline in droves. They traveled north from New York, Connecticut, Massachusetts, South Carolina, and Maryland, where they had lived since being unceremoniously stranded, many brutally separated from husbands, wives, and children who had been intentionally put on different ships. Upon returning to their newly declared homeland in Canada, the Acadians built tight-knit social groups and harbored a fierce protectiveness of their Francophone roots and way of life. That, to a profound degree, included sailing, boatbuilding, and catching fish.

In the 1920s, LeBlanc started harpooning the bluefin tuna



alongside two other Wedgeport-based fishermen. "How the men hated those tuna, those horse mackerell!" David MacDonald wrote in 1955 in Canada's *Maclean's* magazine. "As big as a thousand pounds, they wrecked nets. Speared, they fought for hours. And all the monsters were worth was a mean three cents per pound at canneries along the shore." By the early 1930s, LeBlanc had already repeatedly tried to catch giant bluefin on rod and reel, a piece of fishing equipment designed for smaller fish. Instead of a delicate linen line, he rigged his rod with a double steel line tied to piano wire. Before the invention of fiberglass rods, a hard tuna strike could reduce a fisherman's bamboo rod to shards. At the time, less sportingly but more lucratively, Wedgeport's fishermen also corralled bluefin in nets in the open ocean en masse. Once the bluefin were netted, the fisherman pulled them to shore, dragging the ponderous catch behind their boats and eventually aground. Helpless in the shallow water, the fish were killed and sent to either Boston's fish market or a cannery. In 1932, Nova Scotia netters had landed 204 tonnes of tuna, nearly double the previous year's catch. It was a fishery for flesh and sustenance, not an activity fit for a gentleman.

Despite having no luck with rod and reel, LeBlanc's brother Louis and another friend did manage to harpoon the largest bluefin tuna ever landed in Wedgeport in 1934, a 1,100-pound giant they stretched out at the wharf for gawkers. That was likely the fish Lerner eventually glimpsed in the photo at the gas station—a bluefin that had bumped history off its steady trajectory as a low-value novelty fish. That picture set the hook. The circle complete, the two Americans rented LeBlanc's small wooden fishing boat, or dory, and rigged a swivel to the chair on its front—a big-fish

fighting trick Lerner had picked up in the Caribbean—and hired a third man to pull the boat's second oar. The next day they left at dawn and returned home with their two giant fish: the first rod-and-reel tuna ever landed in the region.

By the time Lerner and Gifford arrived back at the dock, Wedgeport boys were shouting news of the fish on the streets, and the men were passed around for backslaps and handshakes. The next day, the pair headed out for more fishing, only to discover a port packed with boats, each crammed with looky-loos who wanted to see a bluefin caught by rod and reel for themselves. The flotilla, including one boat with a brass band aboard, headed toward the bank where tuna swam; Lerner caught his next two giant tuna to the melodic notes of horns floating across the waves.

Energized by his success out on the water, Lerner excitedly summoned his friend, journalist and angler Kip Farrington Jr., who was fishing nearby, to join in on the action. Farrington, who was traveling and fishing with his wife, Sara Chisholm, couldn't pass up the invitation. By the end of the couple's first day chasing tuna in Wedgeport, both had caught their own fish, making Chisholm the first woman on record to catch a tuna on rod and reel.

After his Nova Scotia trip ended and he returned to New York, Lerner passed along photos of the massive fish to some sportswriters he knew, who published them in newspapers and magazines. Soon the international wires to Yarmouth were humming with interest. Lerner, who, according to Gifford, "would have severed a leg or arm as readily as he would the line if there was a fish on the other end of it," returned to Wedgeport within weeks. By the end of his second trip, Lerner had landed 26 giant bluefin tuna.

As the news of Lerner's success catching bluefin in Wedgeport



spread, the world's fishing illuminati responded. Amelia Earhart, by then widely known for her aerial feats, spent two weeks traveling and tuna fishing with friends along Nova Scotia's coastline. In 1935, coal heir and sportsman Van Campen Heilner included a chapter on giant bluefin fishing in Wedgeport in his definitive *Salt Water Fishing*. In a vivid color plate printed within the book entitled "Nova Scotia Sleigh Ride," a giant fish pulls a two-man dory against a salmon-colored sky. "The tuna is there now, his great blue-black back just beneath the surface," Heilner wrote. "He's so big he scares you. It can't be possible that you've almost mastered him. . . . There is a wild roar of waters as the great fish threshes from side to side and is drawn quivering over the stern. The giant mackerel is yours."

From those earliest days, Lerner saw the possibilities for Wedgeport. He called the town's top fishermen into a meeting and laid it out for them. After Lerner's presentation, it was clear the American felt their long-maligned bluefin could draw anglers "from the four corners of the world," according to Wedgeport fisherman and former army captain Israel Pothier, although he personally saw Lerner as "batty or a teller of tall tales." But Lerner told them to clean their boats, install fishing chairs and toilets, buy their own bluefin fishing tackle, and get ready for the world's arrival.

Wedgeport's citizens didn't waste any time throwing themselves into the enterprise, opening hotels and restaurants, printing business cards, and placing newspaper ads. The hype even reached the Oval Office: one day in 1936, the year of his reelection, US president Franklin Delano Roosevelt fished for tuna on Soldier's Rip (even all the power in the world can't guarantee a

fish on the line; he didn't get a nibble). Babe Ruth also visited that year.

As wealthy American anglers scrambled northward, Farrington had an idea: they would recruit teams of top fishermen from around the world and invite them to Wedgeport for a few days of fishing. It would be an international tournament featuring giant bluefin with a wide silver trophy, a prize donated by Boston's Eastern Steamship Lines president Alton Sharp.

Starting in 1937, teams from 28 countries, along with writers, photographers, and gawkers, eventually overran the town and its population of 1,000 people for the annual event. Homes were converted to hotels, housewives volunteered as chefs, and small groups of locals banded together to form crews. Paid for by the province of Nova Scotia's trade board, each crew consisted of a captain, a guide familiar with tuna locations and behavior, and a chummer, whose sole job was pulling herring out of a barrel, cutting them into pieces, and throwing them overboard to draw the tuna close. Each member of a fishing team was given a time slot, and the instant a fish struck the bait, it was that fisherman's turn on the rod. In addition to daily pay, crew members were often given the landed tunas to sell, and the few sports who took the fish back to their home countries for stuffing and mounting often paid the locals for the market value of each fish. At the end of the tournament, once they had landed their quarry, watched organizers hand out prizes, and swilled champagne from the silver trophy, most anglers lost interest in the tunas' heavy carcasses. The fish hung on the docks, their skin drying and cracking in the ocean breeze until they were cut down and either sold to a cannery or dumped.



Often uncomfortably, the growth in Wedgeport's tourism economy posed a double-edged sword. Marketed abroad by the province's government as a sportsmen's paradise, Wedgeport had locals who were pegged as quaint, antimodern "folk," the inhabitants of and guides to an unspoiled wilderness of beauty and bounty—at least for those willing to pay for the privilege. And pay they did. By the mid-1900s, one report estimated that anglers annually spent at least \$2 million in today's dollars in the town, with local fishermen making nearly twice as much as their counterparts elsewhere in the province. That money "bought cars, launched boats, sent sons off to college," said an article in *Maclean's*, and helped build new houses and fix up ramshackle ones.

The festive spirit of the annual tournament, according to one magazine account, provided part of its allure. Locals sipped martinis with Brazilian coffee kings while the Cubans tried to teach everyone how to samba. "There are tournaments with more contestants, but they're all so parochial," said Toronto's Tom Wheeler, an organizer of the British Empire team. "Any angler would give his eyeteeth to compete at Wedgeport." One year, according to a *Maclean's* report, a locomotive engineer traveled 38,000 kilometers from South Africa, using up three years of vacation time and his life savings to join Wheeler's squad—but he didn't end up catching a single fish. Soon after arriving for the 1939 tournament, teams were disappointed, but not shocked, to receive news that the Second World War had begun. "The French team said, 'Nous allons chez nous tout de suite. . . . Goodbye, Bonjour,'" recalled Israel Pothier.

Organizers canceled that match and subsequent matches for the duration of the war, but the event resumed to great fanfare in

1946. That year, Farrington wrote about his return to the town for *Maclean's*. "Nowhere had I fished where so many big fish were surfacing at one time," he wrote. "I don't believe there was a fish showing that weighed less than 500 pounds." He watched, with amazement, as hundreds of fish jumped, rolled, and swam at high speeds all around his boat at the rip. Tourists returned in droves, and the town breathed a sigh of relief as their wallets and booking calendars filled up once again.

For subsequent decades, a visit to Wedgeport remained a bucket-list item for any high-class fisherman in the know, just as a boom of postwar prosperity and tourism brought with it new opportunities for towns trying to draw new visitors. And one scrappy Canadian widow played an essential role in bringing the glamour and excitement of Nova Scotia's bluefin industry to a wider global audience.

In 1946—the year Wedgeport's tuna tournament resumed after the war—Margaret Perry, a 41-year-old, curly-haired widow, arrived in Wedgeport lugging a suitcase-sized 16 mm film camera and her heavy, awkward tripod. Recently hired as the only film-making employee of Nova Scotia's industry and publicity department, Perry had come to Wedgeport, like so many others before her, to witness the bluefin spectacle. Yet her aim was different: she wanted to curry the story of the spectacle to greater fame worldwide and help draw tourists to her home region. She had a front-row seat to the changes that a fishing boom could bring to a down-on-its-luck fishing village and was aiming to capture, in her film, how entangled a community could become with a fish on which its fortunes depended.



For weeks, Perry set up shop in the village, becoming a familiar sight on docks and boats in her pleated khaki pants and hair that blew wildly in the wind as she framed shots through her camera's viewfinder. She talked to fishermen who told her about their town and way of life, making notes in a notebook she juggled along with all her other equipment. She captured shots of the town's church, schoolhouse, and cooperative store, of yoked oxen pulling carts, cows browsing on beaches, and men digging clams beside them with hoes and buckets. Out on the water, she shot big tuna surfacing in a rise of water and bubbles, lured with fish scraps and pursued with long harpoons from the prows of dories. Aboard a rocking boat, she filmed the delicate, gory procedure of removing a bait herring's backbone, so it would wiggle more realistically in the water on the line.

To demonstrate migration patterns of bluefin, as they were known at the time, Perry built an elaborate lightbox of projected, cutout shapes of continents bordering the Atlantic Ocean. With her camera running, Perry used a magnet to move tiny white paper tuna, filled with metal and drawn across a projector screen's blue backdrop. In the film, the tiny white torpedoes make their way down the coast of Europe, eventually striking the Gulf Stream off Africa's western coast. The current then draws them toward a group of islands labeled "Indies," where, according to the voice-over, the fish stopped to breed before making their way up toward Canada's east coast.

Perry delighted at the participation of women in the sport and wrote a section of script for the film that runs over a jaunty instrumental interlude. "Women may be considered the weaker sex, but watch Georgia Manning, who has many record catches to her credit," enthuses the film's narrator near the film's end.

"She has a strike already!" In the vignette, Manning, a *hairy* haired angler in rainproof pants and white gloves, *rocks back and forth* in the straps of the fighting chair's cloth harness as she smiles widely. Together, Georgia and her husband, John—the "Angling Mannings"—landed 43 tuna weighing a combined 12.6 tonnes between 1938 and 1946. "No, tuna fishing is *not* just a man's game," the voice-over declares.

Privately, Perry marveled at the road she had traveled that had brought her to directing her very first documentary. A decade earlier her life had been mostly unremarkable. She was born Margaret Rice just after the turn of the century in the small village of Upper Mills, New Brunswick, on the cusp of Canada's border with the wilds of eastern Maine. She trained as a stenographer, one of the few careers welcoming to women at the time, but hated that job and being stuck within an office's four walls every day. Her real home was the outdoors, the deep forests and rocky beaches that crept along the Atlantic coastline.

In 1934, Margaret Rice married Stanley C. Perry, a geology and minerology professor at the University of New Brunswick, and they settled into a happy life together. Two years later, Stanley died suddenly when his car collided with a speeding fire truck. He left his wife behind, pregnant and with no income. A reeling Perry leaned on her growing passion for photography and started taking photos and writing for magazines. She signed up for a correspondence course in "still and movie photography," and when her son was born, she named him Stan, after his late father.

As Perry poured herself into learning the technical and artistic craft of making films, she worked as a projectionist for the newly formed National Film Board of Canada (NFB) during the Second World War. She lugged projection gear and delicate reels to



community centers and church basements across the Maritimes, providing those communities with a glimpse of valor and international warfare beyond their plowed fields and dusty gravel roads. In her spare time, Perry made 10-minute documentary films about life in Miramichi, a rural northeastern region of New Brunswick. The amateur shorts caught the attention of a local member of Parliament who recommended the nascent filmmaker to NFB founder John Grierson, the man who first coined the word "documentary" in 1926.

In June 1942, when her son, Stan, was only five years old, Perry arrived in Ottawa, Canada's capital, where she wrote scripts and directed films, including one on the cooperative fishing movement in the Bay of Fundy and another on Nova Scotia's lobster fishery. When the war ended, that province's government offered her a job in its tourism department, where she became its first director of motion picture publicity films.

For nearly 15 years, Perry worked as the sole filmmaker and staff member of the Nova Scotia Film Bureau, where she wore all the hats: cinematographer, director, editor, location scout, scriptwriter, sound recorder, and driver. "Sometimes I didn't know if I was going to sink or swim," she recalled to writer Olga Denisko in 1975. "The only good thing about it was that nobody else knew more than I did, and so it was just up to me. And I made out." In her work, Perry was drawn to the dramatic tensions threaded throughout Atlantic Canada's postwar society, and Wedgeport's booming bluefin industry provided a tantalizing lacuna through which to tell that story. Her job, after all, straddled the worlds of promoting both tourism and industry, which, according to one critic, created a consistent tension within her films "between images evoking an anti-modern culture amidst natural splendor,

and those that glorify relentless industrial progress." Looking at a photo of Perry standing on a dock, I found myself struck by a deep affinity for her and her work: a mother, trying to conceive of a largely male sport and profession, while still claiming it as her own, to bear witness and to tell its story.

The film that brought her to Wedgeport, *Battling "Blue-Fins,"* was her first major project in this role and won Perry an award in 1951 from a documentary film festival in Rome. It cast a bright and dazzlingly public light on a niche industry that had, up to that point, mostly grown through word of mouth. Ultimately, the film showed Wedgeport's townspeople and wealthy tourists engaged in a delicate dance, one rooted in the act of catching tuna but embellished by an exotic experience of each other. It captured a region in the throes of transformation, as it made awkward, delightful changes to adapt to modernity.

In the postwar landscape, Wedgeport was a sportsman's aspiration. And with so much money and machismo flowing through the town, it was only a matter of time before Wedgeport experienced its first international incident, which arrived rather bizarrely from the reaches of Outer Baldonia—one of the world's first modern micronations and, as I was to discover, the next target, after Margaret Perry, of my bluefin tuna fixation.



**IN 1948, RUSSELL** Arundel first spotted the rocky bluffs of Outer Bald Tusket Island, a four-acre island five nautical miles off the Nova Scotia's coast, near Wedgeport. The island, a long,



wedge-shaped slice of green scrub and white stone, lay near the fishing grounds where tuna congregated and had historically been used as a stopping-over point for fishermen. Arundel, a tuna angler and chairman of the Pepsi-Cola Bottling Company based in Washington, DC, wanted to buy it, and he was a man who got what he wanted. Within a year of making the purchase, which cost him \$750 (about \$9,000 today), Arundel declared himself the Prince of Princes of Outer Baldonia. "Back in Washington, the deed in my pocket and a drink in my hand, the Principality of Outer Baldonia began to take shape," he told *Esquire* in 1953.

Known as a hard partier on Capitol Hill, Arundel issued his own Declaration of Independence, which, in addition to banning women outright, declared fishermen to be "a race alone." He endowed them with the following inalienable rights: "The right of freedom from question, nagging, shaving, interruption, women, taxes, politics, wars, monologues, cant and inhibition. . . . The right to swear, lie, drink, gamble. . . . The right to sleep all day and stay up all night." The group's responsibilities included fishing as well as the exportation of empty rum and beer bottles.

Arundel appointed DC tax attorney Prew Savoy as prince regent, minister of state, and "Ambassador to the United States without Portfolio or Credentials" and offered 20 wealthy white Americans and Nova Scotians princehoods. Citizens of the "nation" included 70 members of the Wedgeport Tuna Guides Association—they were declared "eight-star admirals" in the Outer Baldonian navy. The principality's cloth flag was a white circle with a Dutch-blue tuna tail on a green background. Arundel minted the kingdom's currency, the tunar, in \$1 coins and \$25,000 bills, the latter of which were printed with the slogan "War on Poverty." Along-

side his friend, the watchmaker Arde Bulova, he even designed an 18-karat gold pendant watch emblazoned with the Outer Baldonia seal, which he gifted to family and close friends. Despite hiring a group of locals to build a small, one-room cottage using smooth beach stones, Arundel spent only a single night on the island, declaring it inhospitable due to mosquitos and cold, gusting winds. But that didn't stop him from listing the nation in the Washington, DC, phonebook or compelling a friend at the Rand McNally publishing house to include his island on a published map.

In 1952, in the early days of the Cold War, it appeared as if some Soviets didn't get the joke. Writing in Moscow's *Literaturnaya Gazeta*, a letter writer named "L. Chernaya" accused Arundel of granting his subjects the unrestricted right "to tell lies, to be rude." Arundel's rule of Outer Baldonia, Chernaya continued, represented the worst of America's imperialism and the country's export of capitalism worldwide. (One writer at the time did suggest the letter may have been Russian-facing mockery.) In response, Arundel wrote to Russian leaders threatening to break off diplomatic relations, letters that drew snickering public support from the Halifax Yacht Club and Wedgeport fishermen. International newspapers and magazines soon caught wind of the controversy, and in 1967 Nova Scotia's legislature officially recognized the micro-nation, stipulating that its citizens must nevertheless continue to pay provincial taxes. In 1968, Arundel told a reporter that he never heard back from the Soviets. "And that is how I won the war against Russia," he declared.

Ultimately, Arundel's fidelity to his own nation proved fickle when, starting in the 1950s, Wedgeport's bluefin started disappearing. For reasons scientists and fishermen couldn't explain, the



huge tuna that had once prowled Soldier's Rip simply stopped showing up. Some fishermen blamed the Japanese longliners that had recently arrived, while others hypothesized natural changes in ocean currents and food sources had drawn the fish elsewhere. Others attributed the slump to a local priest who had threatened his parishioners that if they didn't stop tuna fishing on Sundays instead of attending church that the fish would go away. In either case, in 1957, the International Tuna Tournament shifted to the community of St. Mary's Bay, and in 1976 was canceled altogether. Arundel, who donated his island to a regional nature conservancy, stopped making the trip to Wedgeport. A quarter century later, one Canadian government report stated that the western Atlantic tuna population of that era had been "seriously depleted, largely because of severe fishing pressure."

Losing myself in Perry and Arundel's paired projects, both clad in the trappings of a trivial romp, gave me a strange and uncomfortable frisson: of how quickly luck struck Wedgeport and how quickly that fortune faded. Gone were the martinis and the felt hats. These days in Wedgeport, it's hard to find a good restaurant open late on a weeknight, and my off-season visit to the town's tuna museum/café required someone calling in a favor to let me into the dark, shuttered building. Inside, I marveled at the giant rods, at the stuffed fish, and at a black-and-white portrait of an Indigenous Mi'kmaq woman in full regalia standing beside a giant fish she had caught. Hers is one of so many stories, barely remembered except by old-timers nursing bitter coffees at the bar.

In a region founded by farmers and fishermen, many accus-

tomed to scraping a subsistence living from the land and sea, the arrival of new money, tourism, and a powerful globalized fishing economy resulted in a capitalist experiment. Those huge bluefin, found nowhere else in the world, rapidly transformed Wedgeport into a major tourist town, and the money and opportunity flowing from those fish transformed lives across the region. Yet trophy fishing is, at its heart, an exploitative endeavor, and as the object of a fancy, exclusive sport championed by the era's industrial elites—for whom opportunism was a way of life—the town had made a calculated risk.

With every huge fish landed on Wedgeport's docks or left to die hanging from a giant beam in the sun, groups of anglers posing in front of its body, the Atlantic bluefin population lost some of its most powerful, most prodigious breeding adults. Fishermen gave those fish away, threw them away, or sold them for pennies. They were a commodity for status, for recreation, and a way for families to send their children away to school to become doctors or lawyers. But as Wedgeport discovered, an economy based primarily on a natural resource can be a tenuous thing, particularly if that natural resource has a threshold that no man or woman can easily see.



## CHAPTER FOUR

### BEFORE THE STORM



**Al, 1970s**

GILBERT: A dreamer is one who can only find his way by moonlight, and his punishment is that he sees the dawn before the rest of the world.

ERNEST: His punishment?

GILBERT: And his reward.

—OSCAR WILDE, "THE CRITIC AS ARTIST"

**T**he first tuna—Amelia's earliest ancestor—opened its eyes onto an ocean riven by change. It was the late Paleocene, between 65 and 55 million years ago, the period following the dinosaurs' extinction but before the Himalayas formed, when volcanoes still regularly thrust upward from the earth's cooling mantle. Bony fishes were evolving from the same primordial soup that birthed sea urchins and seals and eventually subdivided into the Scombridae family, which included tuna. Tectonic changes during the era then disrupted the tropical Tethys Sea, a warm

body of water that had previously divided the world's two supercontinents and would eventually become the Mediterranean. This kick-started a period of rapid ocean cooling that forced bluefin to travel farther afield for prey and likely resulted in the fish's extraordinary endothermic evolution, which eventually allowed it to warm its muscles, organs, and brain using what is essentially a built-in heat pump.

With the ability to travel huge distances unlocked, these new bluefin spread widely and boomed, branching into *Thunnus thynnus* in the Atlantic Ocean, *Thunnus orientalis* in the Pacific Ocean, and *Thunnus maccoyii* in the open waters of the southern hemisphere. The Atlantic bluefin, not forgetting the warm waters of its own birth, sought out those same waters when it came time to spawn, a voyage that necessitated huge journeys, which it made using its refined senses for salinity, currents, and possibility even electromagnetism from trace metal deposits in its skull. Those ancient underwater trails eventually led it to the Mediterranean in the east and to the Gulf of Mexico in the west, two watery patches reminiscent of its earliest home waters. When Al Anderson daydreamed, he liked to believe that within every bluefin tuna rested that ageless genetic memory, an encoding of knowledge, passed down fish to fish, that resulted in the strong, wily bluefin he fished from Rhode Island's waters.



**ON THANKSGIVING WEEKEND** in 1970, a time of year when he'd otherwise be out tagging, Al packed up to spend a few nights at



his parents' New Jersey home on Safran Avenue. Arriving off the busy highway, he pulled onto their quiet, tree-lined street, hoisted his bag, and spent the evening under the roof he had helped build. He slept late as much as he could and helped his mother fix a few things around the house, but soon his orderly life, once again, tilted off its axis. On that Thanksgiving Saturday night, 60-year-old Arthur plummeted to the living room floor, and Isabelle and Al crouched helpless beside him.

At the time, Al taught biology at Westerly High School while renting a modest apartment, and had been working hard to establish himself as a respected fisherman and generally science-minded fellow in the Narragansett community. In his first few years teaching at the school, he started a co-ed student fishing club that allowed him to pass on his growing knowledge of the waters around Block Island. A few times a year, he and his students would ride school buses to the nearby Point Judith Harbor, where they'd climb aboard one of the marina's many party boats or commercial fishing vessels. He marveled at the transformation in the young teens as they became anglers, proudly holding dripping codfish up to the camera with crooked smiles. In the evenings, if he wasn't fishing, he'd be fixing gear or filing the paperwork needed to maintain his US Coast Guard charter skipper's license. During his early tagging years he operated the boat he bought in college, that leaky four-meter plywood skiff he had to bail out every 20 minutes or it would sink. (He knew it was time to get the bucket when his tackle box began to float.) By the time Arthur died, Al had saved up and graduated to a six-meter Aquasport he bought with cash.

Losing his father changed something in Al: his mother sold the house on Safran Avenue for another home in Rhode Island and

offered Al the chance to live there with her. In those days, he accepted—but couldn't quite come to terms with—the idea that teaching and fishing and living with his mother would be the extent of his life. But he was still young and handsome, and he wanted someone to share his life with, a smart, savvy woman who could accept his passion for fishing and put up with, as he saw them, his “quirks.”

By the early 1970s, Al also started to realize that his bluefin fishing hobby could make him some serious money. That decade, new buyers of bluefin began popping up around New England ports, including in Rhode Island. They were foreigners who had never been in the area before, mostly hailing from Japan. These buyers often paid previously unheard-of prices for top-quality bluefin, although sometimes their demands for how the fish were to be stored and processed seemed frustratingly unreasonable to the local “salts,” a dockside nickname for longtime fishermen.

It wasn't widely known outside fishing circles at the time, but overfishing of Japanese Pacific bluefin stocks had suddenly crashed that country's bluefin populations, and demand for alternative sources of the fish had begun to spiderweb across the world. Between 1962 and 1967, Japanese boats caught between 5,000 and 12,000 tonnes of bluefin off the coast of Brazil; soon after, the fish virtually disappeared from Brazilian waters. A similar crash in the North Sea and the Norwegian Sea occurred in 1963.

In the 1960s, laws concerning where international fleets could legally fish were still evolving. After the Second World War, Chile, Ecuador, and Peru were the first countries to establish a



"200-mile limit," a declaration that underwater territory would be considered off-limits to deep-sea fishing and whaling by other countries' fishing fleets. The United States and Canada were slower to claim their own limits, and starting in 1963, the fleets of "super seiners," as Mather referred to them, began showing up.

Responding to drops in stocks caused by heavy fishing pressure across the world for species including bluefin, the Brazilian government hosted a conference in Rio de Janeiro three years later, in 1966. There, 17 countries, including the United States, signed on to an agreement establishing the International Commission for the Conservation of Atlantic Tunas (ICCAT). By 1971, the agency, which pulled its structure roughly from the United Nations model and was founded under the authority of the UN's Food and Agriculture Organization, had moved its headquarters to Spain—a choice attributed to the country's high tuna catches and lobbied for by the country's dictator Francisco Franco.

Within a few months, ICCAT administrators were setting up international meetings at which member countries could raise concerns about tuna fishing levels and management, and where they would ultimately divide the spoils of wide-ranging oceanic species including bluefin. Yet it wasn't the length or location of a member state's coastline that determined how tuna catches were divided. Instead, economically developed countries like Canada and the United States used historical catch data to stake their claims on future catches: something smaller countries protested but were largely helpless to stop. For many, ICCAT represented a wolf in secretarial glasses, mandated to carefully record in its ledgers how many sheep were to be consumed, and by whom.

Around the same time, Frank Mather's tagging experiments using data from Al and other taggers were sending him clear signals that bluefin tuna were being overfished. It seemed obvious to Mather that the species would be in danger if catch limits weren't immediately enacted, and he thought he could prove it. His data showed that rates of tagged fish being re-caught were extremely high, which suggested to him that changes in the fish's population structure could be directly attributed to overfishing. Mather, who worried about the fish he loved to catch, called the situation "catastrophic." During the same period, he remained active in the international scientific community's inquiries into bluefin, including sitting on the FAO's Continuing Committee for the Facilitation of Bluefin Tuna Research, corresponding with bluefin researchers around the world.

As early as 1970, many policymakers and scholars knew that the planet could not sustain that era's current extraction practices and levels—paired with ongoing human pollution and ecosystem destruction—for any meaningful period of time. They bristled at the degree and side effects of extraction, an abuse of nature on a global scale in the name of progress, expedience, and profit. "[We] will have to tackle on a hitherto unprecedented scale the thorny task of regulating industrialized fishing in international waters," the academic George F. Kennan wrote in a 1970 *Foreign Affairs* essay entitled "To Prevent a World Wasteland." In the piece, he suggests that a global fleet of independent patrol vessels with enforcement power might be the only solution to the race to the bottom. "Exploitative motives cannot usefully be mingled with conservational ones," he wrote. "The principle should be that one exploits what a careful regard for the needs of conservation



leaves to be exploited, not that one conserves what a liberal indulgence of the impulse to development leaves to be conserved."

While the US Department of Commerce offered subsidies to commercial bluefin fishermen, Mather spent his own money traveling to Washington, DC, where he tried to convince lawmakers that the bluefin's late spawning age, which he had concluded hovered around five years old, meant it reproduced slowly and made it vulnerable to overfishing. He also warned them that even the sparse data points he had gathered were incomplete: in 1974, he noted that the volume of transatlantic migrations of fish from the eastern (European) stock to the western (North American) stock, could scuttle any certainty scientists had that their stock assessments were correct. By 1966, Mather had documented more than 14 tagged fish—caught and tagged at two years old off the US coast in 1954—that were eventually caught in the Bay of Biscay, just off France's arcing coastline.

Those recoveries echoed stories Mather found, dating back to the early 1900s, of fishermen in the western Atlantic discovering Mediterranean fishing hooks lodged in the mouths of bluefin. While those numbers of ocean-crossing fish paled in comparison with the huge number of bluefin tuna in the Atlantic, Mather still strongly believed it was a phenomenon that should give fisheries managers pause. If more bluefin than they knew regularly crossed the Atlantic, the predictive math they used to ensure the species' long-term health couldn't be trusted.

Why exactly these fish were crossing the Atlantic remained a mystery and challenged the prevailing theory that Atlantic bluefin lived and spawned in two independent groups. But despite Mather's data, federal fisheries managers were unswayed, telling

him that he didn't, after all, have a degree in biology and should leave the number-crunching to the professionals. Still, those transatlantic recaptures gave Mather pause. If any progress was to be made on understanding and protecting bluefin, he believed, it would have to be the result of sustained international effort. "This species cannot be studied successfully on a piecemeal or limited area basis," he wrote in one unpublished report from the late 1970s.<sup>1</sup>

As bluefins' transatlantic voyages defied international borders, their spiking value and enormous range made them an easy target for growing global fishing fleets. At ICCAT meetings in 1973 and 1974, the US delegation put forward a proposal that catches of large bluefin on either side of the Atlantic be chopped by 25 percent from the average catch levels in 1968 to 1971, with a 50 percent catch reduction in fish seven years and younger and a minimum catch size of 14 pounds, but the proposal failed. In 1975, however, delegates did agree to a massively scaled-back version of the plan, agreeing to the size limit and a voluntary quota—although this latter condition was more of a suggestion, without any enforcement or detailed catch numbers attached.

Roger Hillhouse, a tuna spotter pilot and purse seiner owner, agreed with Mather's dire predictions—one of the few commercial fishermen to do so at the time. In 1974, Hillhouse and another captain showed up at an ICCAT meeting in Madrid with a request that his industry be further regulated to help preserve bluefin populations; he suggested a size limit of 15 to 20 pounds, which the organization rejected. The following season, Hillhouse and two other captains set a voluntary per-harvester quota of 998 tonnes, and Hillhouse kept his word: for the next decade, he



docked his three purse seiners after they reached that threshold. He also wrote a public letter blasting his industry for wiping out bluefin alongside the passenger pigeon and buffalo. "His colleagues beat him down enough that he kind of kept quiet after that," Mather once said in a book interview. "He's the only commercial guy I knew who had a farsighted attitude."

In August 1975, in part due to pressure exerted by Mather, US president Gerald Ford signed the Atlantic Tunas Convention Act of 1975, which made ICCAT regulations enforceable within the country. Debate over the legislation had been intense, with many commercial fishermen fighting any future prospect of catch quotas or limits that the organization might potentially impose. Mather, not accustomed to a public spotlight, struggled with his new role as the target of many fishermen's ire. But an op-ed published in *Right Rigger* magazine after the bill's signing celebrated Mather and the importance of the legislation, which was the country's first-ever substantial conservation plan for oceanic gamefish. "Conservation programs are never popular, especially when they are needed," it noted.

The following year, the United States passed the Magnuson Fishery Conservation and Management Act, which put federal management of the nation's fisheries under the National Marine Fisheries Service and eight regional councils.<sup>2</sup> The move built a framework for protecting species and also for restricting foreign fishing fleets from entering the country's exclusive economic zone (EEZ) within 200 miles of the country's coastlines. And from the very beginning of those regional councils, it was clear that commercial fisheries and political interests would set the agenda. Environmentalists and watchdog groups at the meetings were few

and far between, and delegates were focused on splitting marine spoils between states, catching foreign vessels infringing on US waters, and promoting and fostering the domestic fishing industry. Meanwhile, delegates to the commission, men appointed by their state governments, flew to Europe and made handshake agreements over tables littered with cigarettes and whiskeys. "The psychology of the 200-mile limit and the nationalism of developing countries is not designed for the management of a world resource like the tuna," John Mulligan, director of an industry-linked tuna association, told a journalist writing in *The Atlantic* in 1976. "It's a very complex problem, one which has been talked about at the Law of the Sea conferences and will be talked about again, but with so many countries involved, it's an almost impossible task."



**ON A DARK**, January morning in 1975, Daryl Schmid rose, alone in her bed, before the sun did. The predawn darkness was so cold that frost had started branching along the framed glass of her two-story split-level, a home she rented from her parents. She peeled off her sleeping clothes, pulled on a pair of slacks, yawned, and started helping her two daughters get ready for school. Once mothering duties were discharged—lunches packed, hair brushed, 12-year-old Janet and 11-year-old Susanne off to school—Daryl slid into her car and headed for the ocean. Her smooth curls bobbing with every pothole, she drove along the road to the north



end of the Point Judith Pond, pulling into her regular parking spot at the Ram Point Marina. She key-jingled her way to the front door and opened up her family's business for yet another day.

Once tourists and other gawkers leave for the season, winter can be strangely busy in a maritime town. Gear needs to be fixed and replaced, rotting boards and cracked plastic demand repairs, and the fish don't stop swimming. As long as the harbor remained free of ice and the fishing stayed good, crewed boats continued to ply their trade, and all that meant work to be done at and around the boatyard. So, on that cold January day in 1975, sitting behind the desk in a room she had known for most of her life, Daryl watched the front door to the marina's office swing open as Al Anderson strode into the room.

Closing the door against the midwinter wind, the broad-shouldered man, neatly dressed in a shirt and tie, took stock of the room and walked up to the counter where Daryl sat. He wanted to know who owned a license plate he had seen in the parking lot: Rhode Island 8487. "I do," Daryl said, looking him straight in the eye. "You want to sell it?" he asked her. Those numbers, he said, were the last four of his home phone number, the one he used for his fishing charter business, and he wanted the plate. "No," said Daryl. Daryl told him it wasn't for sale. She had inherited the simple plate from her grandmother—its four digits identified it as a classic plate, distinctively old-stock New England—and she couldn't imagine selling it. Al nodded grudgingly and hung around the office for a few minutes before walking down to the boatyard, where he struck up a conversation with mechanic Stu Knowles. Now he had bigger things on his mind than the license plate: he wanted to know more about that gal in the office. "Forget

it," Knowles said. "She just went through a divorce and isn't dating anyone."

Daryl's father, Bill Schmid, had lucked into opening up the Ram Point Marina: after graduating high school, he apprenticed as a boatbuilder, and in 1942 he joined the US Coast Guard and married his high school sweetheart, Marilyn. At just 19, he had already spent most of his life sailing, his skills on the water earning him a quick promotion to chief petty officer and command of his own boat and crew. After the war, the Schmidts moved to a small seasonal community in Narragansett called Breakwater Village with their two small daughters, Daryl and Liane. Here, Schmid fished to support his family in a summer village where they were the only year-round residents. For four years Schmid fished on other people's boats, hauling up nets and arriving home stinking of fish guts, and soon found work at a boatyard. There, he struck up a relationship with a customer named Robert Parsons, a wealthy man who loved his three sailboats but didn't love the work of sailing them himself. Periodically, he hired Schmid to take him out and, once the two were close, asked what it would take to monopolize Schmid's time during the summer season. To this, Schmid pointed out the obvious: he needed a way to make money during the winter. So Parsons agreed to finance a boat-building business at the tip of the Point Judith Pond, a business that grew into the Schmid family's boatyard and marina. From there, he sold gas, supplies, and parts, all with a handsome view of the bay.

Daryl worked for her parents as their very first "dock boy"



during junior high, pumping gas and watching the store during her lunch break so they could go home and eat. She helped out on weekends, and watched her mother tally numbers and order parts, her father drip sweat and wring oily towels over sputtering engines. She stopped working at Ram Point after she got married and had her two girls, but while her marriage was failing she needed an exit ramp. Her parents bought a house off the new highway and rented it to her; to support herself and the girls, she went back to working at the marina. Her life had been spent a stone's throw from the ocean, and she was happy there.

A few months after his first encounter with Daryl, Al stopped into the marina again, this time looking for a rare long bolt to fasten a used giant tuna fishing chair to his eight-meter Bonita boat. Striding up to the counter, he asked Daryl if she knew what the piece was and if she could find one. Without rummaging around or making a fuss, she calmly pulled out the exact bolt Al needed from the store's jumble of items. This woman, Al thought to himself, was his destiny. A few days later he returned to the marina, awkwardly perusing items and loitering until the office had cleared. He asked Daryl if she wanted to go out. "What do you have in mind?" she replied pleasantly. Al stared at her, stymied. He had prepared for yes and he had prepared for no but he wasn't prepared for a follow-up question. He stammered for a bit before proposing dinner and a movie. "Okay, sure," responded Daryl with a smile. (It turned out that Stu the Mechanic, his loyalties firm, had rattled Al out, so she had anticipated the invitation.)

On their first date, the pair went out to dinner—where they discovered a mutual love of nonfiction biology books—and then went to see Burt Reynolds as a football-playing ex-con in *The*

*Longest Yard.* They both knew, from that night, that for each other, this was *it*. Daryl often teased Al, accustomed to getting his own way, that if he wanted her license plate badly enough, he had to marry her to get it. They wed 18 months later, her girls in dresses, Al in his best suit; Al said he felt like the luckiest man in the state.

Daryl loved Al deeply, but she was a perceptive woman and already had a sense of the troubling childhood memories Al often struggled under, a weight he rarely shared. Within weeks of moving in together, she had discovered that he could be disturbingly mercurial, ranging from jolly to brooding in an instant. He guarded his possessions carefully and snapped at the young girls if he thought they were handling them roughly. Once, he took his stepdaughters to the park so they could watch him fly a balsa wood glider he'd built. Soon after arriving, the glider ended up slightly damaged, and Al, brooding and snappy, immediately ended the outing. Susanne, his younger stepdaughter, noticed that, particularly when embarrassed, Al would overreact at the smallest perceived slight. Once, though, he pretended to be a sea turtle, flapping his arms as if they were flippers underwater, and the entire family broke out laughing. Susanne learned that if Al seemed on edge, she could ask him to reprise his sea turtle impression; he'd usually soften even after his most half-hearted attempt at transforming into a turtle, arms flailing at his sides.

Al's troubled childhood also manifested in more obvious ways. During Al's first Christmas with Daryl and the girls, the four went to visit his wife's parents as a blended family. That first morning, everyone in Daryl's family's had left Al presents under the tree, but he had no idea how to react to them. Sitting in the



living room that Christmas morning, he handled a box with his name on it for longer than normal as her family looked on. To break the awkward silence, Daryl's sister finally said, "Alan, you've gotta open your present." After a pause he said, "It's mine?" His daughters rolled their eyes as he slowly, carefully, shook the box, turned it over, wondered what was inside, marveled at it, carefully unwrapped it, shook it some more, then finally opened his present. After his first disastrous foray into marriage and so many years living alone with his rods and books, Al had simply settled into a life without presents. He later confided in Daryl that his parents had never given him a single true Christmas present, not the way that other kids got them.

Once, Daryl asked Al about the toys he had when he was little. He thought for a long time, until a distant memory emerged: there was one cigar box decorated with a line, and he used to drag it behind him on a string. This was his only memory of owning a toy. Al's father had once bought a toy train for Christmas but Al wasn't allowed to play with it: every year Arthur set it up around the Christmas tree, where it looped its endless, predictable trajectory, never touched by the small boy who had unwrapped it.

At parties, despite being tall and handsome, Al hesitated to socialize, tending to hang back in the corner until someone approached. He could be hard to get talking, although his stepdaughters soon learned that engaging him on topics he could hold his own on, such as fishing, weather, and biology, was a guaranteed way to break the ice. In small ways, the damage lurking within Al's structured days of teaching and fishing erupted, often out of the blue. His teenage stepdaughters learned to steer clear of Al's office, of his fishing equipment, of touching anything that

could prompt a harsh, inexplicable rebuke. This quickness to anger closely resembled the fury Al could unleash at his own tuna-fishing crewmembers and clients, and eventually became part of his professional reputation. If you went fishing with Captain Al, you were guaranteed to catch fish, but you were equally likely to get yelled at if you messed up.

Still, on other days, his enthusiasm for fishing, science, and ideas washed across his family in an effervescent wave. Once, Al decided to dress up for one of his classes, and the girls helped him cut and decorate a box that he pulled over his tall frame. He arrived at school that day as "Mr. Cell," wearing a black polo shirt buttoned to the neck, his dark-framed glasses and black sideburns setting off the black-square-painted cell that contained all Al's microscopic innards. In a photo from that day, his arms poke out from holes cut in either side of the box, elbows pointing outward and hands pointing toward the dashed lines of his carefully drawn mitochondria, chromatin, and ribosomes, his mouth wide in a silent, gap-toothed cheer. Living with Al was often an irrepressible joy.

Once school resumed in the fall, Al headed out on overnight striper fishing trips throughout the season. After a long night on the North Rip, he'd slouch into his classroom, always on time but often exhausted and irritable. Just as his home life with Daryl and the girls ranged from ecstatic to chilly in an instant, Al found himself both loved and despised by his students. His enthusiasm for preparing them for careers in science often veered into the extreme, and he didn't give easy grades. He designed his human biology curriculum for seniors on what he wished he himself had learned before heading to university, and he demanded that his



students buckle down in the class. The seniors, many of whom wanted to pursue careers in medicine and biology, dissected cats in the class, and Al pushed them, deducting marks when they, for instance, labeled a leg bone only a tibia, when it was, as Al chided, the left tibia. "There happens to be two tibias," he lectured as the teens rolled their eyes behind his back. Yet for every student who, as he said, "hated his guts," Al found the parade of critiques paled with the validation of chatting with the small handful of graduated students who returned, gushingly grateful at the extent to which they had entered college so well prepared.

Out on the water, during weekends, evenings, and the summer charters he ran when school was out, Al preferred running his boat solo: racing from captain's chair to the rods, spinning tales of fish behavior and past exploits for clients, furiously yelling at other captains if they dared draw their boats over his lines. Sometimes, if chartering a big group, he'd hire a mate, including, for one season, his stepdaughter Susanne, to help with the rods and landing fish, and his ire wasn't reserved for fellow skippers. One former mate, Steve Tombs, who fished with Al as a teenager, recalled Al snarling over the shoulders of startled, wide-eyed clients. "What are you doing? Didn't your mother teach you anything?" he'd growl. One morning Al accused another mate, Matty DiMatteo, of forgetting to pack the right rods, and the two got into a screaming match in front of a boatload of terrified onlookers. DiMatteo smashed Al's prized flashlight against the side of the boat while Al bellowed. A fishing mate once asked Al if it bothered him that so many people seemed to hate him. "William," Al growled in response, "I love it." Even many of Al's friends started as enemies. Captain Ed Everich first met Al in the 1960s when

the pair tangled fishing lines. They screamed obscenities at each other, but after Everich bought Al some new gear, the breach was mended. "You either liked him or you didn't, and I think the feeling was mutual," Everich said.

Yet whatever Al was doing had been paying off. He closely observed gear and techniques other captains used to land fish and even adapted a new "umbrella frame" rig of wire and latex tubing, used to simulate an eel-like forage fish called a sand lance, to his own specifications. If he twisted the wires in a corkscrew, they bobbed and swayed with the currents, closely mimicking the fish's undulating swimming. Drawn by guaranteed catches and word of mouth, more charter clients were calling and booking repeat fishing trips year after year. For every fisherman who avoided Al, there seemed to be two or more who sought him out, eager for his blustering camaraderie, work ethic, and knowledge of local waters. Some were also curious about the red-and-white T-emblazoned triangular flags, each one representing a fish he had tagged and released that day, that he raised up on the *Prowler's* outriggers out on the water.

Al, who had tagged hundreds of striped bass since his time in graduate school, heard about his first tagging return, or "recapture," in 1970. He received the news via a typewritten letter that included a patch—a gold-stitched fish on a royal blue background denoting his first recaptured tag for the American Littoral Society—as well as the original tagging card he had filled out and mailed after initially tagging the fish, the mustard-yellow spaghetti tag he had embedded in its back, and a handwritten note from the angler who had recaught the fish on the shores off Montauk two months after Al had caught and tagged it off Point



Judith. Chuffed, Al carefully placed the entire package in a plastic sheath as proof that his tagging work meant something, and was being reflected back by the wider world as having value. As he encouraged his clients to tag fish, every year a few more fishermen were willing to let fish go in the name of science. It was here a larger picture began to reveal itself: he had discovered a niche in the market for other curious fishermen who wanted to tag fish and see where they ended up.

Al's favorite fishing spot, a rushing of currents known as the North Rip that lies off Block Island's northern tip, had been formed by the southern edge of the region's last retreating glacier. Nineteen thousand years ago, the glacier ground up and deposited clay, sand, and gravel in a roughly triangular shape along its southernmost border, or terminal moraine. As it melted, it left barn-size chunks of ice atop Block Island, which was then about six times as large as when Al first encountered it.

During the last ice age, the port of Point Judith lay underneath a massive sheet of glacial ice that perched atop the absolute edge of the North American continent. As this icy topper melted and scraped southward across the sandstone and shale bedrock, it sheared steep mountains to rolling hummocks while deepening and smoothing its valleys and lowlands. Everything from Narragansett downward was peninsular, divided from the mainland by the long, jagged Point Judith Pond. Viewed from above, the scraped terrain recalls honey dripping from a bottle's wide mouth, a carved geologic north-to-south recollection of migrating glaciers. A few thousand years after the ice melted, a surge of molten

lava bubbled up, creating a giant seam of pink crystallized rock known to stonecutters as Narragansett Pier granite.

Indigenous families lived on the land now known as Rhode Island for thousands of years, the eventual devastation of their people leaving little upon this land but artifacts: quartz and green shale arrowheads, hide scrapers and drills, stone axes, soapstone bowls. Once, they lived here year-round, moving to winter settlements when storms and winds threw snow pellets, lashed the rocky shores, and bent the clinging pines nearly sideways.

Al also dug deep into the history of settlement along the coast. By the 15th century, Narragansett tribes lived in a handful of semipermanent villages, governed by chiefs called sachems. They had cleared land on which they grew corn, squash, beans, and pumpkin in brimming summer gardens. They harvested hickory and chestnuts—the latter would be wiped out by disease—pounding flours and pressing oil that overwintered in clay pots. From the ocean and its rivers, they harvested spring runs of alewives and collected the coastline's abundant, seemingly inexhaustible shellfish. They made ceramics and were remarkable stonemasons. They were overwhelmed by disease, cheated of their land, and largely massacred in skirmishes and battles with British colonists by the 1700s. "The natives received the voyagers kindly, bartering furs, provisions etc.," reads one 1902 account. "But the [colonizers] nonetheless endeavored to steal women and children to carry to Europe, and thus early began that bitter enmity." By the time those words were penned, white settlers had claimed their land, parceled it out, and spread livestock across the rocky region.

America's Revolutionary War with the British came to the area



in 1775, when batteries were built along Narragansett Bay to prevent the passage of unwanted ships. By then, the region had become famous for livestock, including Narragansett Pacer horses, which had the smoothest gaits over New England's rough roads, and dairy cattle—one farm's 100 cows produced more than 6 tonnes of cheese annually. As builders erected piers and wharves along the coast, shipbuilding and fishing for alewives, bass, smelt, and white perch became mainstays. The region was notorious for unpredictable weather: on July 14, 1894, an eight-minute hail-storm destroyed \$50,000 worth of property (nearly \$2 million in today's dollars) and caused "many cases of nervous prostration." In summer, fashionable city crowds flocked to Narragansett's beaches, but in 1900 a giant fire consumed the Narragansett Pier Casino, the town's primary landmark, along with a large hotel and several blocks of buildings. By 1920, the town's population hit a low of 1,000.

As new highways branched like roots across New England in the postwar boom, the town reached 3,500 people in 1960, steadily drawing aspirational families, like Daryl's, to its safe harbors. For decades at that point, the Atlantic Tuna Club<sup>9</sup> had been attracting anglers who wanted to fish the hard-fighting small-school bluefin every summer. Learning this history and lay of the land was one method Al used to make a name for himself charter fishing, regaling clients with stories of the local fishing and geology so they came back for more. He headed out as frequently as he could, fishing with self-assured swagger alongside grizzled veterans and full-time skippers, trying to understand, as fast as he could, where the fish were and how to catch them.

In the mid-1970s, as striped bass catches off New England



boomed, Daryl quickly developed a reputation as the mysterious woman who dropped huge stripers off at the fishermen's co-op, the group her father had cofounded decades before, for sale to the public. As dawn broke, Al would arrive home from his early-morning fishing trips, his big Chevy half-ton truck loaded with fish. He'd squeeze in a quick shower and breakfast, throw on his slacks, white shirt and tie, and they'd head to Westerly High in Daryl's car. She, on the other hand, managed getting the fish sold.

Intrigued by Al's growing reputation, an editor from *The Fisherman* magazine, a respected regional fishing publication, contacted Al to see if he'd be willing to contribute fishing reports about Block Island; Al jumped at the chance to get his name out there. If he could make some money *and* spread the gospel of fish tagging—of stripers, bluefin, billfish or sharks—all the better.

Despite ongoing concern in the scientific community that overfishing was hurting Atlantic fish stocks, fishermen continued to pull record-breaking hauls of fish out of the ocean. Those fish provided anglers with anecdotal fodder that everything was fine. In 1979, while fishing out of Port Hood, Nova Scotia, a Canadian angler named Ken Fraser caught the largest bluefin tuna ever recorded. In a photo taken after the catch, the 1,694-pound fish dwarfs Fraser's heavy, water-splattered frame; the width of the bluefin's sickled tailfin appears longer than Fraser's entire torso. He holds a huge-reeled tuna rod in his right hand as his left rests on the fish's sharp dorsal fin, his eyebrows slightly raised over wide eyes. Beside him, the fish, which was likely around 25 years old, gapes in death, hanging by a rope from an off-camera winch. The photo represented a strange landmark: demand for tuna meant that no fish of its size would ever grow that large within



Fraser's lifetime and perhaps ever again. Since 1973, American sport anglers had been allowed to catch only four bluefin a day, only one of which could be less than 14 pounds or heavier than 115 pounds. Yet as commercial fishing continued apace on both sides of the Atlantic, even respected longtime tuna fishermen like Al Ristori were increasingly convinced the species was, as he put it, "seriously overfished."

This was a phenomenon that also extended to Al Anderson's beloved striped bass. In 1979, recreational fishers landed more than a million total of the fish, and Congress directed the US Fish and Wildlife Service and the NMFS to commission a multimillion-dollar emergency scientific study to investigate the dire state of the bass fishery between North Carolina and Maine. Despite Chapman's apparent trust in the basic premise of maximum-sustainable-yield-based fisheries management—that regulators could respond to scientific data quickly and effectively—it took five years of dwindling stocks until federal conservation limits were passed.

As charter captains bucked under new catch limits for stripers, Al sensed a growing opportunity. Sure, it wasn't legal to catch and keep small bluefin, but tagging them offered a convenient loophole and provided a chance to study the fish more closely. Sometimes when he caught a particularly handsome large bluefin, he would legally sell it to one of the Japanese buyers on the docks. It seemed crazy, the prices they offered for bluefin, and there seemed to be no ceiling on how high the fish's value might rise. And while Al didn't know it at the time, why and how this occurred—and how a previously worthless fish captured the imagination of a generation's worth of northeast fishermen—drew

its foundation from events decades prior. They would culminate in the arrival of one of the world's most notorious cult leaders and a loyal following of his acolytes in one of America's most historic fishing communities, while setting the stage for the tempest on the horizon.



## CHAPTER FIVE

### RISING MOON, FLYING FISH

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#### Japan, the 1970s

It is better to go home and make your net than to gaze  
longingly at the fish in the deep pool.

—JAPANESE PROVERB

**I**n 1971, Japan Airlines Co., or JAL, faced a conundrum. For every 6 tonnes of freight transported halfway around the world to North America by its giant cargo planes, it was only shipping less than a tonne back. So the company tasked a 41-year-old Japanese employee, Akira Okazaki, with filling the empty space. That meant Okazaki needed to find a high-value perishable product that justified the high cost of flying it to Japan. Surging demand for bluefin in the Japanese restaurant market seemed like a good opportunity, and Okazaki had heard rumors that the biggest, fattest fish could be found off Canada's east coast—reputational remnants of Wedgeport, Nova Scotia's formerly famous fishery. Okazaki transmitted a teletype to the airline's first Canadian